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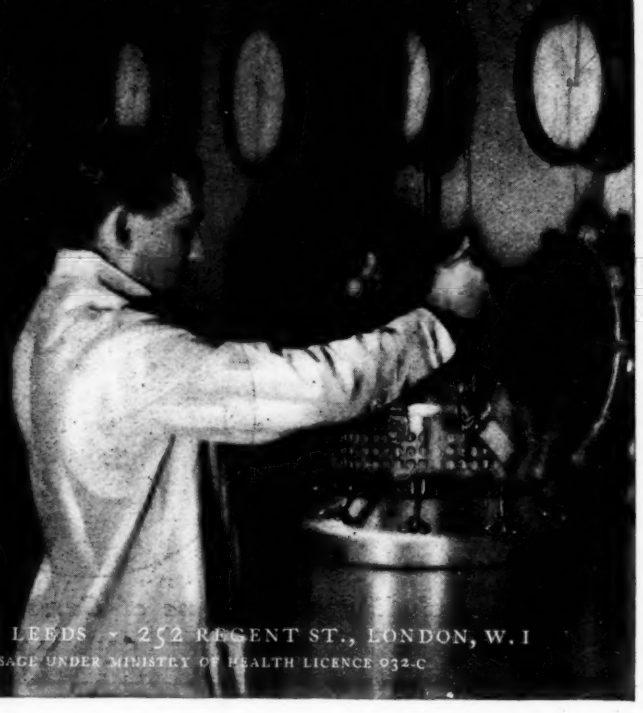

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An Address
ON
CARDIO-VASCULAR SYPHILIS IN GENERAL PRACTICE.*

BY

CAREY F. COOMBS, M.D., F.R.C.P.,

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THIRTY years ago—when I was a student—we were just beginning to realize the essential nature of the relation between syphilis and tabes; no syphilis, no tabes. And in my early out-patient days the art of skiagraphy, which has added so much to our knowledge of these lesions, was only just beginning to be applied freely to the diagnosis of aneurysm. Again, it was approximately at the same time, about 1907, that Schaudinn first published an account of the *Spirochaeta pallida*. This gave a tremendous impetus to the study of syphilis. Within the next two or three years we acquired a new diagnostic weapon in the Wassermann test, and added salvarsan to our therapeutic resources.

It is not surprising, therefore, that our views as to the frequency of syphilitic injury to the heart should have changed in this period. Formerly thought to be a rare lesion, it is now known to be one of the most inevitable results of the infection. This change is due partly to a more accurate understanding of the nature of cardio-vascular syphilis. In those early days we thought of it in terms of gummata: now we think of it in terms of aortitis. Recent experiences in the histology of cardiac syphilis have convinced me that in this change of view we have come nearer to the truth. In the course of a study of cardiac infections I have lately cut sections from a series of fifteen syphilitic hearts. Aortitis was seen in every case, while only once did I find a gumma, and that was a microscopical one.

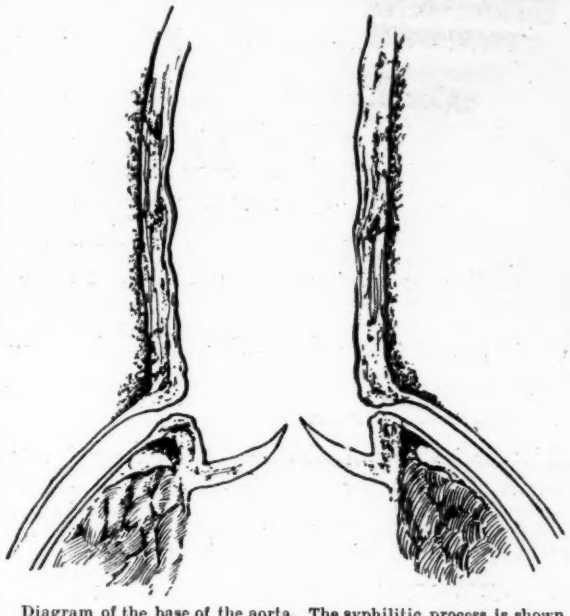

Diagram of the base of the aorta. The syphilitic process is shown surrounding the aorta and the coronary orifices, and penetrating the media of the aorta and the bases of the aortic cusps.

PATHOLOGY.

For more than one reason it seems clear that we ought to rank these lesions with those of tabes and general paralysis. They fall into the same epoch, a stage of the syphilitic process, that is, about twenty years after the primary infection. During that period, in the vascular as in the nervous system, there is no evidence of disease. When symptoms do appear they increase so rapidly as to suggest that lesions have been developing for years without any great disturbance of function, and this impression is confirmed by histological inquiry. Both aortitis and tabes, then, develop in the same way and reach maturity at the same period. Moreover, they occur in the same kind of person, in the middle-aged man, and, in fact, often coincide in the same patient, producing the Babinski syndrome more or less full-blown. Then, again, there are histological similarities; both sets of lesions appear to arise in the lymphatic system and to end in a kind of starvation of the special cells of the part concerned rather than in a direct poisoning of those cells themselves.

So far as the cardio-aortic pump is concerned, the most constant lesion is aortitis. Sections of the aortic wall show that this inflammatory process spreads from without inwards. (See diagram.) Infiltrating the peri-aortic connective tissue, masses of cells, mostly lymphocytes, fill the lymph channels and pile up in a dense layer lining the outer aspect of the aortic wall. Through this layer the vasa vasorum pass on their way into the aortic media, and at this point they are surrounded by the lymphocytes. The walls of these small vessels swell so much that their channels are almost closed. More striking still, however, is the investment of lymphocytes, which clings to them as they penetrate into the aortic media. The result is that in the media large collections of lymphocytes can be seen which spread along planes between the laminae of elastic tissue. Later, these laminae break down, and large spaces form within the aortic wall, which are filled with inflammatory cells. These spaces perpetrate widespread breaches of the medial elastic, and it is not astonishing that aneurysms are apt to form. At the corresponding part of the aortic wall the intima becomes thickened as if attempting to form a kind of buttress or emergency dam at the weak point in the wall.

Even if there were nothing else, this breach in the continuity of the medial elastic is a serious business. It means that the circulation is deprived of part, at least, of that aortic recoil which constitutes one of the chief agencies forwarding blood to the periphery. The risk of aneurysm is, of course, not to be forgotten, but this is occasional, whereas the loss of elasticity is invariable. It must involve an increase in the work which the left ventricle is called upon to do. Even if syphilis did nothing worse than this, it would rank high as a cause of cardiac failure.

But it does much more. The inflammatory tide, which we have described as breaking against the outer aspect of the aortic tube, spreads along it towards the heart, being checked at the root of the aorta owing to the disposition of the lymph channels. Yet the fact that it is, so to speak, held up here causes that inflammatory wave to spend itself with particular force on two structures that lie at this level—namely, the mouths of the coronary arteries, and the commissural attachments of the aortic semilunar cusps. The coronary orifices are nipped in a tightening grasp, the result being starvation of the muscle which they supply, with replacement fibrosis and degeneration of the myocardial fibres. Thus the ventricle is compelled to work harder, while starved of its proper nourishment. Further, the aortic cusps, infiltrated at their commissural ends, become stiffened, and adhere to one another and to the adjacent aorta, thus becoming incompetent. Sometimes also they perforate near their bases. About two-thirds of the patients who suffer from cardiac syphilis display signs of aortic regurgitation. It is true that there are parts of the heart that are spared: the right heart is rarely attacked, the mitral valve never. Yet the syphilitic process achieves such a concerted attack on the cardiac functions as to set in motion a whole series of vicious circles and to bring about a failure, which moves with ever-increasing velocity to the final catastrophe.

This is, in general, what we are to expect from the examination of a syphilitic heart. There are, of course, additions, as there are exceptions. The coronary vessels, or the aortic cusps, or both, may be spared. On the other hand, gummata may be added to the changes which have been detailed. On the whole, however, we should think of cardio-aortic syphilis as conforming to the pattern which I have described, and as coinciding in time and in other respects with the taboparalytic phase. Aortitis is, in fact,

* Given on September 24th to the Bath and Bristol Branch of the British Medical Association.

a parasyphilitic lesion, and owes its existence to the survival in the body of spirochaetes which have resisted treatment.

Clinical Aspects.

Now, since these lesions do not declare themselves by symptoms till approximately twenty years after the primary infection, it follows that we ought to be on the look out for a large number of cases during the forthcoming decade; for it was during and immediately after the war that the incidence of syphilitic infection greatly increased. It is true that during that period, and since, the treatment of syphilis has been more active and thorough than ever before. Nevertheless, the possibility of this increase in the incidence of cardio-vascular syphilis is partly responsible for the choice of my subject. A calculation based on an analysis of 2,089 cases of organic disease of the heart and blood vessels indicates that at the present time syphilis is the cause, in Bristol at all events, of about 5 per cent. of the cases. If autopsy data are taken, the incidence is even higher—about 8 per cent., according to Dr. Taylor's General Hospital figures. Already, then, it is a not unimportant source of cardio-vascular disease.

Discussion of Signs.

A majority of the patients whom I have seen have sought advice on account of cardiac symptoms. In a few instances some other effect of syphilitic infection, upon the nervous or other organs, has brought the patient under a general examination, and a cardiac lesion has been found. The usual course of events is a complaint of dyspnoea, or of precordial pain, or of both, by a man in middle life, who is found on examination to show signs of aortic regurgitation. Even in these straightforward cases there are several aspects that deserve some consideration.

The pain complained of is of the cardiac type, being substernal, gripping in character, and aggravated by exertion. It is, however, often distributed over unusual areas, such as the front of the right shoulder, and it has a way of arising spontaneously, and without any provocative exertion; that is not so common a feature of the other pain-producing lesions of the heart. Then, again, one has to be ready to recognize aortic leakage on little evidence. It is true that the signs, once established, tend to increase steadily, and that the diagnosis is therefore soon declared. One small point to be remembered in this connexion is that it is worth while listening for the basal diastolic murmur with the patient in all sorts of positions. It may, for example, become audible when he sits in a chair and leans forward. Dr. Herapath tells me that the use of a wooden stethoscope enables one to hear aortic diastolic murmurs that would otherwise escape detection.

Another point which I think receives too little attention is the extreme, and often decisive, value of blood pressure readings. This is particularly true of the aortic incompetence that results from syphilis, which is so rapidly progressive that free leakage may be encountered even before there has been time for a corresponding increase of the ventricular mass. I need hardly add that the significant change is an increase in the pulse pressure. This is sometimes caused partly by increase of the systolic pressure, sometimes by a fall of the diastolic pressure, sometimes by both. More often it is a downward movement of the diastolic figure, which may fall so low as to be unmeasureable by the auscultatory method. In such cases one finds that as the air escapes from the armlet, the critical moment at which the loud arterial sound is replaced by a softer one is not reached at all, or is reached so gradually as to make a definition of its precise level impossible. When these phenomena are encountered, they are to be construed as evidence of a very free leakage.

In making a full diagnosis of cardio-aortic syphilis, as of any other visceral lesion, our object must be to visualize the anatomical and physiological disturbance as a whole. We must therefore compel ourselves to recollect that the disease which has thus injured the aortic valves has also, in all probability, inflicted damage on the wall of the aorta and narrowed the coronary arteries at their mouths. The damage to the aortic wall may be roughly assessed by dividing the cases into those in which there are no direct evidences of aortitis, those displaying signs of general aortic dilatation, and those with a saccular aneurysm. In mentioning a group in which no signs whatever are found, I have in mind some in which even a careful *x*-ray examination failed to show any widening of the aorta. It is difficult to understand how this can occur, yet experience proves that it may. A considerable proportion of all cases is included in the second group. The physical signs are not very obvious as a rule. In many there is no more than an accentuation of the aortic second sound, but this is highly significant in the appropriate context, especially in the presence of a normal or low blood pressure. To this may be added an increase in the aortic dullness, which may reveal itself on either side or on both sides of the manubrium. It is also worth while to percuss down the sternum. Ordinarily this should fail to encounter dullness, but if the aorta is enlarged the percussion note is decreased over the upper part of the sternum.

The physical signs of aneurysm are so numerous and so well known that there is no need to describe them here. Perhaps two comments may be worth while. The first is that one should differentiate as clearly as possible between saccular aneurysm and general dilatation of the aorta, since there is so wide a difference between the prognosis and the treatment of the two conditions. It is true that they are merely different stages of the same process, but the simple dilatation is important chiefly because of its implications in regard to circulatory inefficiency, while the aneurysmal sac behaves like a dangerous intrathoracic tumour. My other comment applies both to the aneurysm and to the general dilatation. Although examination with the *x*-ray screen is always helpful, we should practise the art of diagnosis by ordinary physical examination, since it is almost certain that in a majority of cases we shall have to make the first tentative diagnosis without depending on *x* rays.

It is even more certain that ordinary clinical examination must be relied on to furnish a basis on which to form an estimate of the amount of myocardial inadequacy in any given case of cardiac syphilis. Here one must be prepared to accept hints, and not to expect these to be too plain.

For example, a woman, aged 51, seen on the day on which these notes were written, gave a history of repeated miscarriage and of a fortnight's precordial pain arising independently of exertion, and spreading through the left arm to the finger-tips. She was seen to be a little breathless on slight exertion, such as sitting up in bed for examination, and the lips were bluish. Physical examination disclosed no explanation of the phenomena other than a myocardial one, and there was little but a reduplication of the first sound of the heart over the area of ventricular impulse, an ominous sign of myocardial impairment.

There is the more need for care in looking for such evidence, since the electrocardiographic method is not only difficult of access, but apt, in these cases at all events, to be equivocal in its results. Gross changes of rhythm are not very common in cardiac syphilis. Heart-block was noted in three of my 103 cases, total arrhythmia in eight, and auricular flutter in two, with a possible third. The injury which syphilis does to the myocardium is a diffuse injury, since it is at the mouths of the coronaries, and there alone, that the blood supply of the cardiac muscle is cut down. Hence all parts of the cardiac wall suffer equally so far as this process of starvation is concerned; but as it is on the left ventricle that the brunt of the extra work caused by the aortic lesions falls, it is natural that the form of failure common in cardiac syphilis should be that which is described as ventricular. This is manifested by symptoms rather than signs. Yet there are two or three signs whose value can scarcely be exaggerated. First, there is weakening and diffusion of the impulse, and with it a corresponding weakness of the cardiac sounds. In these, again, a cantering rhythm or *bruit de galop* is often heard, and may indicate serious ventricular weakness. The sphygmomanometer may also supply valuable data. By its use we are able to detect alternations of the pulse too slight to be felt at the wrist or recorded on a pulse tracing. Then there is the highly significant shrinking of the pulse pressure gap, which is so valuable an index of decreasing ventricular output.

This discussion of signs may now be summed up in a few words. To those which indicate aortic regurgitation we are to add, if we can find them, evidences of

aortic enlargement, and also of myocardial inefficiency. When this has been done, a mental picture of the extent and distribution of the lesion can be formed.

The next question that we have to ask ourselves in any given case is: What proof have we that this lesion is syphilitic? The answer is derived from four sources.

1. There is the pattern of the disease itself. Aortic incompetence in middle life; precordial pain on slight exertion; dilatation of the aorta—these are patterns which are likely to be syphilitic. Others, such as mitral stenosis with auricular fibrillation, are almost certainly not syphilitic.

2. There is the patient's history. I think we lose a good deal of valuable help because we neglect to make this inquiry, relying instead on a Wassermann test.

3. There is the collateral evidence furnished by signs of syphilis in other organs. One or two examples will make this clear.

A man admitted for aortic regurgitation was found to have a lump embedded in the right lobe of his liver. This disappeared under treatment with potassium iodide. In another instance a patient with a cerebral thrombosis and cardiac hypertrophy with high arterial tension showed a characteristic glossitis, and again the use of potassium iodide strikingly accelerated his recovery. A third case was that of a man with an aortic leak. As we were on our way to the house I asked the doctor whether blood ought to be taken for a Wassermann test, and he said that a glance at the patient's daughter would do more towards clinching the diagnosis. In this man also I found an Argyll Robertson pupil.

4. There is the Wassermann test. There are one or two reasons why this comes last. It is not absolutely infallible; sometimes it is impossible to get a specimen of blood; and by relying on this test alone we may lose a good deal of valuable information which would otherwise be obtained.

I wish I could add to these four criteria a fifth—namely, the response to treatment. We all know how often this proves itself reliable in some forms of late syphilis.

For example, in the case of a man admitted to the hospital for pneumonia, resolution was unaccountably delayed, and at the same time precordial pain developed while he was lying at rest in bed. This aroused suspicion; a history of past syphilis was obtained, and his blood reacted positively to the Wassermann test. Fortunately the therapeutic test was also positive. Under full doses of potassium iodide he improved steadily.

Prognosis.

Now it would be untrue to say that no benefit results from the treatment of aortic syphilis. Signs and symptoms become less pronounced, and may even disappear. Yet the ultimate prognosis is nearly always disappointing. In my own group of 103 cases I was able to trace the outcome, thanks to the help given by colleagues, in 88. The results agree closely with the experiences of others. We must say to ourselves, whenever we establish a diagnosis of cardiac syphilis, that its subject is not likely to live more than five years from the onset of symptoms.

The risk of sudden death must also be admitted in every case of cardiac syphilis, but I do not think the patient should ever be told about it. After all, sudden death does not occur in more than 10 or 20 per cent. of all cases of this disease; there are no distinctive signs by which we can pick out those that are likely to belong to this group, and even if we could, would this help us to prevent the catastrophe? For the sake of trying to seem clever it seems hardly worth while to add a burden of constant apprehension to the troubles of the patient.

At the same time, it is evident that the outlook is more favourable for those people whose circumstances and temperament enable them to live quietly, and avoid excesses, especially habitual excesses, of exertion and emotion. This point has not only a prognostic but also a therapeutic bearing. A mental picture of the state of the aortic wall is a powerful aid in correcting a too optimistic estimate of the amount of physical exertion which the cardio-syphilitic subject should be encouraged to undertake.

We have to remember that in the decades at which the symptoms of cardiac syphilis begin to be felt the normal deterioration in arterial elasticity has begun. It is very striking to see in the microscopy of these hearts a syphilitic lesion which injures the aorta grossly, but spares the coronaries, with the exception of their orifices, aided and abetted by an atheromatous degeneration of the coronary trunks and branches. High arterial tension is therefore to be feared, since it is apt to accelerate this arterial degeneration. I am not, however, going to enter upon a discussion of the treatment of hyperpiesis here, but propose to limit my concluding remarks to a discussion of those measures which may be presumed to have some direct action on the syphilitic process.

Treatment.

1. The most efficacious is potassium iodide. It is difficult to adduce evidence in support of this statement, yet I am convinced of its truth, not only because this has been my own experience, but also of others who have had opportunities of judging. No one seems prepared to offer a satisfactory explanation of the action of potassium iodide on the later lesions of syphilis and the allied infections. Yet I take it that there is no therapeutic fact of which we are more certain than that potassium iodide gets rid of gummata. Now, these lesions of the aorta and the cardiac wall are not gummatous. Yet the action of potassium iodide in helping to diminish not only symptoms, but also signs, is, I think, not to be gainsaid. The patient with cardiac syphilis should begin to take potassium iodide as soon as the diagnosis is made, and he should go on taking it for the rest of his life. He will, of course, have holidays from it, but these holidays are to be prescribed for him, and not by him. One medical man whom I saw with this disease some years ago used to give himself iodine by inunction. He thought it upset him less than the salt taken by the mouth. It is easy to prove that iodine is freely absorbed through the skin by testing the urine for its presence; within half an hour after inunction it can be identified there. This method seems worth trying when the oral dosage is not well tolerated.

2. Mercury. I cannot claim to prove that mercury is more effective than organic arsenic, but it is certainly safer. Each is useful by reason of its spirillicidal properties, and one should, even at this eleventh hour of the syphilitic day, hunt down spirochaetes with undiminished zeal. This is not to say that organic arsenic ought not to be given. We give it to almost all cardio-syphilitics in hospital, but ever since two of my patients died of exfoliative dermatitis and of gastro-enteritis respectively, in both cases during courses of organic arsenic, I have thought that these people must have been in some way unusually susceptible. Others tell me that they consider organic arsenic may actually increase the cardiac lesion in some of these patients. The plan which we follow now, therefore, is to prescribe the arsenic in relatively small doses at relatively long intervals; for example, 0.3 gram doses of novarsenobenzol are given at intervals of a week over long periods till 5 grams in all have been taken. Treatment by iodide and mercury is continuous, and a course of organic arsenic is added from time to time.

That we fail to do lasting good, even by the most careful plan of treatment, must, I think, be generally admitted; after all, this is no more than we should expect. What hope is there of persuading ruptured elastic fibres to join up again, or closed coronary mouths to open once more? The wonder is, not that treatment does so little, but that it does any good at all. No more impressive argument in favour of early and thorough treatment of syphilis could possibly be brought forward than a series of microscopical sections of diseased aortas. If there is any achievement of the syphilitic virus that signally deserves the title of "damaged goods," it is surely to be found here.

Conclusion.

This brings me back to the original purpose of these remarks—namely, to emphasize the fact that aortitis, a distressing and fatal malady, is the inevitable lot of the patient in whom syphilis is inadequately treated in the early stages. There is good reason for hoping that the campaign against venereal disease, which has given to everyone infected with syphilis an opportunity of early and thorough treatment, may succeed in its object and avert these disastrous sequels; but we cannot be confident of this, and it is therefore our duty to be ready for an increase in the incidence of cardio-vascular syphilis in general practice during the next decade or two.

NORMAL STRUCTURE OF ENDOMETRIUM AND DECIDUA AND THE MENSTRUAL CYCLE.*

BY

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The mucous membrane of the uterus differs from that of all other organs of the body in that it goes through regular cycles of change during a certain long period of its existence—namely, the reproductive period. The menstrual cycle, ovulation, and pregnancy introduce complex normal variations in structure, and when to these are added pathological changes, interpretation becomes very difficult indeed. For normal and pathological alike, a knowledge of the time relations to the cycle, the age of the patient, and the history of pregnancy and abortion is most important. Conversely, the stage of the cycle to which curettings belong must often be guessed from our knowledge of the normal in cases where no history is available, or where the history is obscure from continuous or irregular bleeding.

In the development of the endometrium into decidua there is increase in thickness, which is caused by congestion and oedema, swelling of certain of the stroma cells, and changes in the glands, which increase in size and become tortuous.

The earliest change occurs in the glands. About three days after fertilization the ovum reaches the uterus, and up to about the tenth day it lies free, being nourished by the secretion of the glands.[11] It must then implant itself or perish. Only after implantation has taken place do the decidua cells attain their characteristic form, while the glands, their work accomplished, undergo involution.

The glands develop with the prodigality of nature all through the endometrium, and the epithelium, for lack of room to expand, forms papilliform ingrowths of such luxuriance that in longitudinal section each side of the gland may present an appearance which has been described as "saw-like." These glandular changes were formerly described as pathological, under the name "endometritis glandularis hyperplastica," although Gebhardt recognized their likeness to "pregnancy glands."

Since the work of Hitschmann and Adler,[1] published in 1908, it has been accepted that these changes represent normal development, which is called "pre-menstrual." "Endometritis glandularis" as an entity has disappeared, but the "pre-menstrual" gland still puzzles the pathologist, and can figure as papilloma or even adenocarcinoma.

The menstrual cycle may be conveniently divided into four phases: (1) Menstruation, or the breaking down or destructive phase. Physiologically the appearance of the bleeding is regarded as marking the end of a cycle, but it is customary and convenient to date from it, as if it were the beginning. (2) The post-menstrual phase or period of repair. (3) The interval or period of rest during which there is little change in the structure of the membrane. (4) The pre-menstrual phase, during which the changes develop. We may assume that the proliferation corresponds to the early stage in the development of the endometrium into decidua. It is customary to call all degrees of this up to very definite decidua "pre-menstrual," but I desire to be able to say that certain developments are due to ovulation or to ovulation and fertilization of the ovum, or that they *are* pathological. To do this involves an attack on the generally accepted theory of menstruation and its relations to the ovary, but I have no compunction about attacking this theory, for I consider that its foundations are unsound in certain respects.

The orthodox theory asserts that the menstrual cycle is dependent on the ovaries acting as an endocrine organ through the Graafian follicles and corpus luteum; that the internal secretion sensitizes the endometrium and causes proliferation; and that the proliferative changes are to be regarded as preparation for the reception of the fertilized ovum. If the ovum is not fertilized, the menstrual breaking down occurs in due course, and the ripening of a new follicle initiates the period of repair, and ovulation and the development of the corpus luteum again bring about the pre-menstrual reaction. If fertilization occurs, the corpus luteum governs the development of decidua and placenta. It is clear on grounds of experimental comparative physiology that the corpus luteum is necessary for the establishment and for the continuance of at least the early stages of pregnancy.

In the extreme form of the theory it is asserted that: (1) there is no menstruation without ovulation—ovulation must therefore go on all the year round in the absence of pregnancy or disease; (2) that ovulation occurs about the middle of each cycle dating from the commencement of the bleeding; (3) that the ovaries work month-about.

Whether the ovum is fertilized or not, the follicle proceeds to develop into a corpus luteum. In the case of the normally menstruating female, therefore, it is said to be possible to take a pair of ovaries and count the corpora lutea, and by estimating their state of development or retrogression to arrange them in regular series covering four to six months. This can be done, although we have never been able to do it properly. But we are of the opinion that such seriation is capable of another explanation (see below).

The chronology of the corpus luteum for the orthodox theory of the cycle has been constructed by study of the ovaries in the living subject at operation and histologically in material obtained by operation and post mortem. Gynaecologists differ strongly about the results of counting and dating corpora lutea in the living human subject, and we have found the histological method unconvincing. We hold that there is only one method by which the ages of human corpora lutea and decidua can be determined—namely, from the history of properly dated young human ova.

The corpus luteum found in the absence of pregnancy is commonly called the "corpus luteum of menstruation" or "corpus menstruationis." We hold that these terms express erroneous ideas, and therefore should not be used. A corpus luteum signifies one thing—the ripening of an ovum; its relation to menstruation is problematical.

The theory we accept was formulated by Heape[2] more than thirty years ago in opposition to old theories of menstruation, from which the present orthodox theory is descended. His main point was that ovulation and menstruation were independent functions in certain fundamental respects. The observations were made on wild monkeys, and the work has recently been confirmed and made more precise by G. W. Corner,[3] Hartmann,[4] and others studying the colony of rhesus monkeys at the Carnegie Institute of Washington, Baltimore. They find that in monkeys the occurrence of menstruation *is not dependent on ovulation*, but goes on more or less regularly all the year round, although ovulation, the absence of which is tested by the absence of corpora lutea, is in complete abeyance. Moreover, in the absence of ovulation, the cyclical changes in the endometrium do not occur, and the bleeding may take place from an endometrium in the resting stage. If ovulation occurs in a given cycle the resultant corpus luteum acts to bring about the so-called "pre-menstrual" changes in the endometrium. Corner rejects the term "pre-menstrual" and substitutes "progestational."

Corner refers to cases in which his monkeys, although menstruating regularly, showed only one corpus luteum between the two ovaries. We have frequently seen this in the human subject, but usually the menstrual history was not obtainable or was uncertain. We have, however, a very few cases in which a single young corpus luteum was present in patients who had been menstruating regularly, and Corner refers to similar cases. The Teacher-Bryce Ovum No. 2, the age of which is reckoned as 19 days, is the earliest specimen in which the whole uterus and ovaries are available for study, and there is only one recent and one very old corpus luteum. It is clear that the subject was fertilized at the first ovulation after a period in which that function was in abeyance, but it is not *absolutely* certain that menstruation had been resumed after her previous pregnancy. Properly dated this case

* Read in the Section of Bacteriology, Pathology, Physiology, and Biochemistry at the Annual Meeting of the British Medical Association, Winnipeg, 1930

would have furnished most valuable information about the chronology of the corpus luteum as well as the endometrium in relation to the menstrual cycle; it is from this side that our strongest objections to the orthodox theory come.

In 1908 Bryce and the writer[5] used the precise and trustworthy history of the Teacher-Bryce Ovum No. 1 to correlate the data of twelve young ova in the history of which the date of the termination of pregnancy in relation to the menstrual cycle was known. These data gave a series in which dimensions and ages gradually increased and supplied a mode of reckoning the age of very young ova which was so clear and consistent that it was accepted and adopted in Keibel and Mall's *Embryology* (1910).[6] A second table was then constructed to ascertain at which periods of the month fertilization and implantation would have occurred in the case of these ova on the basis of the first table. The results were inconsistent with the old theories of menstruation and ovulation, but they agreed with the theory of Heape.

The statement of the controversy made in 1908 is obsolete, but the method of research was taken up by Grosser[7] in 1923, and the tables were reconstructed with much new material, the conclusions being revised in accordance with our present knowledge of menstruation, ovulation, and pregnancy. The result is a chronology of the menstrual cycle founded on actual records of dates of coitus and termination of pregnancy which is inconsistent with the accepted theory.

The second table shows that ovulation—with which cohabitation and fertilization must be regarded as practically synchronous—can take place at any period from the second to the twenty-fourth day of the cycle. No period can be definitely indicated as the usual date of ovulation. Fertilization, even as late as the twenty-fourth day, prevents the menstrual breakdown, while early fertilization produces the decidual reaction. We conclude that the fate of the ovum governs the changes in the endometrium and the corpus luteum as well.

The second theory, therefore, asserts that: (1) The menstrual cycle in the human subject normally proceeds all the year round, but ovulation and corpus luteum formation occur only from time to time. (2) There is no regular date of ovulation. The lunar rhythm of the cycle is therefore not due to ovulation, and we are ignorant of its origin. (3) In the absence of fertilization it is probable that several ovulations occur in succession, as in polyoestrous mammals like the mare or guinea-pig. Possibly they occur at monthly intervals, and from each ovary alternately, which would explain why the arrangement of corpora lutea in series can be made in a large proportion of suitable cases (Ruhl[8]).

According to this theory the changes in the ovary and the uterus both depend on the fate of the ovum. The most momentous occurrence in the life-history of the genital apparatus is the union of the male and female elements, and it is reasonable to suppose that this event would communicate some stimulus to the maternal organism. Normally it would be picked up by the mucous membrane of the Fallopian tube, and the immediate response of ovary and uterus would be growth of lutein tissue and endometrial glands.

Menstruation is a cyclical process which provides for the maintenance of the endometrium in a suitable condition for producing the decidua of pregnancy; but the ovum is not dependent on "pre-menstrual" reaction for a suitable nidus. The uterus is capable of developing a decidua of conservation whenever it is called upon to receive and nourish a fertilized ovum.

The occurrence of slight proliferative changes in the endometrium near the end of a period would be interpreted as normal pre-menstrual reaction occurring apart from ovulation. Hitschmann and Adler emphasized the invariability of the reaction. Aschoff[9] refers to cases, possibly abnormal, where it has not developed. Probably there is always some reaction. A more pronounced reaction at any period would suggest that ovulation and corpus luteum formation had occurred, while early decidua would indicate fertilization also. We have seen well-developed reaction long before its time on the orthodox view of the cycle, and we could find the ruptured follicle or early corpus luteum, but we could not find the ovum. Possibly the date of implantation had not been reached.

Two other interesting possibilities are: (1) failure to implant the ovum, or (2) the rejection of the ovum soon after implantation. In such cases "menstruation" would occur from a membrane that could hardly be called anything but early decidua. From a medico-legal point of view, however, it would not be justifiable to diagnose the occurrence of pregnancy from the finding of such a membrane. Classical decidua or trophoblast must be found.

To give an example of the practical bearing of this theory, some of our specimens have come from cases in which curetting was done on account of sterility, and the surgeon demanded to know whether he had been so unlucky as to have interrupted an early pregnancy. We did not care to assert this, but we hope we were justified in saying that such membranes showed that ovulation was occurring, or in some cases ovulation and fertilization as well. Prognosis, therefore, was hopeful. In these cases the theory of Heape appears to us more helpful than the orthodox theory.

It is obvious that the two theories have much in common, but there is sharp contradiction in the time relations. For the discovery of the truth we want accurately dated young human ova. These may be supplied by the new method of Allen and his collaborators,[10] who have washed free ova out of the tubes at operations, or by the older methods. All depends on co-operation between the gynaecologist, the pathologist, and the embryologist, so that the material may be found and properly handled.

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SODIUM AMYTAL AND OTHER DERIVATIVES OF BARBITURIC ACID.*

BY

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Approximately two years have elapsed since the first studies were made on the clinical use of sodium iso-amyl-ethyl-barbituric acid (sodium amytal). In a preliminary report[1] certain clinical observations were recorded, and attention was called to the need of further pharmacological and clinical work before definite conclusions could be drawn as to the safety, contraindications, and limitations of this compound. Since that time various experimental and clinical observations have been made by different investigators, so that the status of this drug is now more clearly defined. The purpose of this paper is to review briefly the data relating to sodium amytal and similar compounds.

Characteristics Common to Derivatives of Barbituric Acid.

All derivatives of barbituric acid have certain characteristics in common which have long been recognized.

1. They are primarily hypnotics; only occasionally will amounts ordinarily producing hypnosis produce analgesia

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or anaesthesia. Sufficiently large amounts will induce analgesia and anaesthesia in both animals and man; however, the dosage of such amounts precludes their routine use in man.

2. There may be a marked variation in the effects observed with a given amount in the same or different animals. Similar variations have been observed clinically, and are, perhaps, more accentuated when larger amounts are employed. This variability of action has made it difficult to select the proper dosage.

3. The amount required to produce a given therapeutic effect bears approximately the same relationship to the fatal dose in each of these various compounds in their clinical application.

4. All members of the barbituric acid series may depress the respiratory and circulatory systems when amounts large enough to produce deep hypnosis are administered.

5. Comparatively large amounts of any of the derivatives of barbituric acid may produce hallucinations, and so forth, when the amount excreted or destroyed reaches a certain level.

Rate and Manner of Elimination.

Apart from the characteristics enumerated above, applying in general to all derivatives of barbituric acid, there are certain differences which pertain very largely to the toxicity, and rate and manner of elimination or destruction.

After the administration of moderate doses of diethyl-barbituric acid (barbital) to dogs, as much as 90 per cent. of the amount administered has been recovered from the urine during the following seven or eight days.[2] With large doses, however, the amount recovered falls to 45 or 50 per cent.[3] That there was no retention in the latter instance was shown by the absence of all but traces of the drug in the tissues of the animal. In most instances the daily excretion reached a maximum thirty-six to forty-eight hours after the administration.[4]

The amount excreted varied somewhat with the mode of administration. Fischer and Hoppe[5] found that 74.4 per cent. was eliminated after rectal administration, 90.3 per cent. after oral, and 92 per cent. after subcutaneous administration. Fifteen minutes after subcutaneous injection traces of barbital were found in the urine.

The amount of phenylethyl-barbituric acid (luminal) recovered falls far below that of barbital. Reinert[6] reports the recovery of 22 per cent. with the excretion persisting for ten days. The maximum daily excretion occurred on the fourth day.

Recently, Herwick[7] reported that in a series of six dogs given anaesthetic doses of iso-amyl-ethyl-barbituric acid (amytal) orally, and of four dogs that received comparable amounts intravenously, no amytal could be recovered from the urine during a period of five to six days. When anaesthetic doses of *n*-butyl-ethyl-barbituric acid (neonal) were given, he was unable to recover neonal from the urine. Hence the conclusion was drawn that these barbituric acids are probably broken down almost quantitatively in the body.

Koppanyi and Lieberson,[8] from the observed persistent action of barbital and amytal in cats, calculated the average rate of elimination (or destruction) for twenty-four-hour periods. Daily doses of 25 per cent. of the average fatal dose were given intravenously. At the end of five days two of the four cats receiving barbital died, indicating that the animals could not have eliminated (or destroyed) more than 25 per cent. of the fatal dose in this period. At the end of a week the cats receiving amytal were in the same physical condition as at the start, indicating that they must have eliminated (or destroyed) nearly the entire daily dose. Further experiments indicated that cats could eliminate (or destroy) an amount of amytal equivalent to from 40 to 50 per cent. of the fatal dose in a period of twenty-four hours. Animals consistently regain consciousness from a sub-lethal dose of amytal in one-half to three-fifths of the time required by them to recover from a similar dose of barbital.

Early in 1929 Campbell and Shonle[9] devised a method which permitted them to recover quantitatively amytal added to the urine. The twenty-four-hour specimens of several patients who had undergone operation under amytal anaesthesia were investigated. In spite of the fact that large doses of sodium amytal had been administered intravenously, no trace could be detected in the urine. Consequently, it was necessary to include the isolation of the possible decomposition products of amytal, which up to that time had not been prepared.

When solutions of sodium amytal are allowed to stand, the barbituric acid ring breaks open with the elimination of CO_2, forming iso-amyl-ethyl-acetyl-urea. This latter product further breaks down, forming iso-amyl-ethyl-acetamide, NH_3, and CO_2. A few minutes' boiling is as destructive to a solution of sodium amytal as standing for some days at room temperature; consequently, sodium amytal solutions cannot be sterilized by heating. In addition to iso-amyl-ethyl-acetyl-urea and iso-amyl-ethyl-acetamide, iso-amyl-ethyl-malonamide was prepared, and the physical properties of all three were determined.

Since amytal and the three decomposition products could be sublimed quantitatively without decomposition, they were able to use one general method. Specimens of the urine, after acidification, were extracted with ether for twenty-four hours in Friedrich's apparatus.[10] The ether extract was dried and concentrated to a small volume in the bottom half of a sublimation tube[11] and sublimed *in vacuo*. The sublimate was dissolved in ether and re-sublimed, the operation being repeated several times to assure better separation from the lipoid constituents which had been simultaneously extracted. Amytal can be separated from its degradation products by its ready solubility in dilute NaOH.

In spite of the repeated sublimation, there were usually a few milligrams of lipoid which persisted. In each instance this non-crystalline sublimate was tested for the presence of traces of amytal, using, first, Millon's reagent, and secondly, injecting a dilute alkaline solution into mice.

The investigators were unable to find amytal in the urine after the intravenous administration of as much as 22 grains of its sodium salt. Extractions were made of aliquots of each twenty-four-hour specimen for a period of three to seven days following the operation. Furthermore, they were unable to detect any of the three probable decomposition products, and they did not obtain any unknown constituents.

Evidently, then, amytal is rapidly and completely destroyed in the body, no trace of it appearing even in the first twelve-hour specimen. This is in contrast with the appearance of barbital in fifteen to thirty minutes after its intravenous administration in dogs.

The absence of amytal in the urine following its intravenous administration is noteworthy. That amytal is probably completely destroyed is indicated by the inability to detect any of the three possible disintegration products in the urine; no study has been made, however, of the faeces, of the content of amytal in the body tissues, or of the rate of disappearance from the blood stream.

Pharmacological Action and General Effects of Sodium Amytal.

Metabolism.

Hines, Boyd, and Liese[11] have shown that amytal appears to lessen the ability of animals to utilize glucose when injected by the continuous intravenous method. Hyperglycaemia and glycosuria, associated with a slight lowering of the plasma *p*H, occurred. Hines, Liese, and Barker[12] found that approximately the same increase in muscle glycogen occurred in dogs with or without amytal anaesthesia. The increase in liver glycogen was about twice as great in the unanaesthetized animals. Hinsey and Davenport[13] also report that the glycogen content of unstimulated gastrocnemii of the rat and guinea-pig did not decrease under amytal anaesthesia. Much controversy has arisen as to whether the blood sugar level is increased under amytal anaesthesia, and opinions are about equally divided.

Mulinos[14] states that amytal does not affect carbohydrate metabolism in the same chaotic manner as ether, and that it allows the mobilizing mechanism of animals to respond to various experimental procedures. Experiments, however, cannot be said to have been performed on normal animals. The glucose concentration in the blood of cats was not raised during the induction stage or for four or

five hours after anaesthesia was complete. Moreover, it did not prevent the action of insulin on hyperglycaemia following sensory stimulation. Certain clinical studies[15] indicate that sufficient amounts of sodium amytal to produce surgical anaesthesia in man did not increase the blood sugar levels above normal. Brill[16] has shown that sodium amytal prevented hyperglycaemia seen following injections of morphine in dogs.

Bolliger and Maddox[17] state that sodium amytal, given intravenously to 125 dogs for the production of surgical anaesthesia, produced a slight rise in the blood sugar levels, no change in the CO_2 combining power, and a slight fall in the blood phosphates. The blood urea of the dogs before they were given sodium amytal ranged between 135 and 340 mg. per 10 c.cm. of blood. In some instances the blood CO_2 was as low as 30 per cent. It was found that less sodium amytal was required for those dogs whose blood urea was exceedingly high. These experiments indicate that sodium amytal is not very toxic to the kidneys, even in the presence of uraemia.

This is further borne out by the fact that there are only slight changes in the blood non-protein nitrogen, blood CO_2 combining power, and urine specimens obtained following the use of sufficient amounts of sodium amytal to produce surgical anaesthesia in man.[15]

Emge and Hoffman[18] reported that patients who have received sodium amytal and morphine as a preliminary to inhalation anaesthesia take in more fluids in the twenty-four hours following the operation than patients receiving scopolamine and morphine. At the same time, the urinary output is actually and relatively decreased in the sodium amytal group.

Patients receiving sodium amytal took fluid by the mouth more readily on the day of, and the day following, the operation, because of the greater freedom from nausea. In the second twenty-four hours the fluid intake in both the scopolamine and sodium amytal groups reached fairly equal levels, but the ratio of output was lower in the sodium amytal group. In the third twenty-four hours the fluid intake was slightly increased over the scopolamine group, and the ratio of output to intake reached more similar levels. They concluded from their studies of the glomerular activity of the two groups that there was no essential difference between them in the amount of phenol-sulphonephthalein excreted.

The effect of amytal upon the basal metabolism of animals was studied by Deuel, Chambers, and Milhorat.[19] They found it to be slightly lowered after amytal, but it usually remained at a constant level despite a fall in body temperature of two to three degrees. Lee[20] found that rats given 2.5 mg. of amytal to each 100 grams of body weight showed a decrease in metabolism of less than 5 per cent.; that those given 5 mg. showed an average decrease of 8 per cent.; and those given 7.5 mg. an average decrease of 20 per cent. It is doubtful in clinical cases if the basal metabolic rate is decreased much below that of normal sleep.

Circulatory System.

The effects of sodium amytal on the circulatory system are somewhat dependent on the amount, rate, and manner of administration of the drug. It is possible by the rapid intravenous injection of sub-lethal doses of sodium amytal in animals to produce death or an immediate fall in blood pressure to alarming levels. By the oral or intraperitoneal routes, the fall in blood pressure is less likely to be as great or as acute in its onset.

Lieb and Mulinos[21] state that sodium amytal, when given intravenously to laboratory animals, depressed the circulation and produced a prolonged temporary paralysis of the vagus to the heart, which lasted from one to one and a half hours. Shafer, Underwood, and Gaynor[22] have confirmed these findings reported by Mulinos. They also found the greatest slowing from stimulation of the vagus in decerebrate animals, and the least in those just under amytal, while intermediate slowing was observed in dogs under ether. The blood pressure increased following stimulation of the vagus under amytal, if the vagus carried a greater number of pressor impulses. Lundy[23] and others have observed an increase in blood pressure in two cases following the intravenous administration of sodium amytal to surgical patients.

As a rule, following the intravenous injection of sodium amytal in man at a comparatively slow rate (1 c.cm. per minute), a decrease in both the systolic and the diastolic blood pressure occurs, usually during the time the drug is being injected, and becomes most marked when the patient loses consciousness. Mason, Baker, and Pilcher[24] reported that the systolic pressure in all but a few instances fell to an average of 30 mm. of mercury, and the diastolic to an average of 15 mm. during the induction of anaesthesia, but returned to normal levels early in the operation. Patients with hypertension, those who are markedly sclerotic, and patients who are debilitated from chronic illness, may show much greater decreases in blood pressure —even to alarming levels.

Forbes, Wolff, and Cobb[25] observed that the vessels of the brain dilated under amytal anaesthesia following the intravenous injection of histamine, and that the cerebro-spinal fluid pressure rose. The vessels of the brain reacted to intravenous injection of histamine in a very different manner, depending on whether the animals were under ether or amytal anaesthesia. Emge and Hoffman[18] found that in nineteen patients who received sodium amytal by the mouth, the systolic and diastolic blood pressure decreased in about the same proportion as that observed after the intravenous injection. They state, further, that this decrease has not given any trouble with haemastasis.

Numerous observations have been reported on the effects of the drug on the pulse rate. Mason, Baker, and Pilcher[24] reported an average increase of fifteen beats per minute. Emge and Hoffman[18] found an increase ranging from ten to twenty beats per minute. In my experience the response of the pulse rate may be variable, though it is seldom slowed. The increase in pulse rate is probably due to the effects of the drug on the vagus nerve.

Respiratory System.

Animals given fatal doses of sodium amytal died of respiratory failure, which usually precedes that of the circulatory system, though failure of both sometimes occurs simultaneously, particularly if the drug is injected rapidly.

Page and Corylloss[26] have described certain irregularities in the rate of respiration occurring in animals under deep anaesthesia just before death. The amounts necessary to produce this degree of anaesthesia in animals is much greater than that used for pre-anaesthetic preparation of surgical patients or for other clinical uses.

Isenberger,[27] in a series of experiments on animals designed to show the effect of narcotizing agents on the function of respiration, found that moderate doses of sodium amytal resulted in a slight decline in the rate of respiration accompanied by a compensatory increase in depth. There was no change in the minute volume. Repetition of this dose in the same animal produced a slight but definite fall in the minute volume of respiration, due to a decline in the respiratory rate as the animal passed into a deep sleep. The sensitivity of the respiratory centre to carbon dioxide after the second dose of sodium amytal remained practically unchanged from normal.

Small doses of morphine given preliminary to sodium amytal seemed to render the action of sodium amytal more uniform as well as more intense, and thus reduced the amount of both sodium amytal and morphine required. He calls attention to the fact, however, that morphine may be chiefly responsible for the changes in the respiration observed after morphine and sodium amytal have been given in sequence in therapeutic doses; also, that basal narcosis, as a result of the proper administration of sodium amytal in combination and sequence with morphine preceding the administration of a general anaesthetic (such as ether), and full surgical anaesthesia with relaxation, were safely and easily established and adjusted. At the same time, there appeared to be retained a definitely higher degree of respiratory reserve than when ether alone, or ether preceded by morphine alone, was used to a state of similar degree of anaesthesia and relaxation. In the clinical use of morphine, it is well known that patients are occasionally seen with marked impairment of

respiratory function following comparatively small doses, so that great caution should be exercised in the combined use of sodium amytal and morphine.

Clinical observation of the administration of comparatively small amounts of sodium amytal for pre-anaesthetic preparation of patients has been described, and follows closely that defined for animals. The respirations are usually regular in rate, but are frequently reduced in amplitude. There was little change in the colour of the skin, although a slight degree of cyanosis has been noted. Mason, Baker, and Pilcher[24] call attention to the development of a flush of the skin, sometimes resembling a febrile reaction.

Central Nervous System.

Sodium amytal and other commonly employed derivatives of barbituric acid are primarily hypnotics when used in amounts that are considered safe. Occasionally one finds evidences of analgesia, and even anaesthesia, in patients who have received comparatively small amounts of the drug. On the other hand, relatively large amounts may leave the patient in a hypersensitive state. This indicates that either the state of the nervous system or the site of action of the drug may materially affect the results obtained.

When the drug is injected intravenously the induction of sleep is rapid and quiet. Drowsiness, noted by drooping of the eyelids, yawning, and slurring of words, comes on after the administration of 3 to 9 grains (0.2 to 0.6 gram). Mason, Baker, and Pilcher[24] observed that as the dose was increased the patient became reflexly hypersensitive, and finally entered a profound state of narcosis. The pupils became contracted, and in some cases fixed, so that they would not react to light. The corneal reflex was diminished, and the gag reflex remained intact. The knee-jerks were often exaggerated during the period of hyperaesthesia. In this state patients sometimes became restless, if stimulated, and some time was required before they again became quiet.

The period of unconsciousness may last anywhere from three to six hours, depending on the amount of the drug given. When a sufficient amount of the drug was eliminated or destroyed the patients passed through a mildly restless period of comparatively short duration, in which they were disoriented, moved aimlessly about, and uttered incoherent statements. On regaining consciousness the patients may carry on a conversation but fail to remember anything about it when questioned later. During the following hours they continued to be drowsy, and slept at intervals, but their co-operation was readily obtained for the administration of fluids, food, and so forth.

When the drug is administered orally or rectally, essentially the same effects are obtained as by the intravenous method, except that a somewhat longer time is required.

Clinical Use of Sodium Amytal.

In our earlier work we used sodium amytal in approximately one hundred cases as the sole anaesthetic. It was soon apparent that the marked depression upon the circulatory and respiratory systems carried with it certain dangers which would not warrant its general use. The greater proportion of the patients were restless and delirious for a period of time, which added further to the difficulties of its employment as an anaesthetic agent. Also, there were no clean-cut criteria for judging the dosage when administered in such amounts.

Subsequently, this drug and other barbituric acid derivatives have been employed in smaller doses to a definite advantage in the pre-anaesthetic preparation of the patient. Holman and Palmer[28] state that the occasional restlessness and the mild delirium after operation are a definite disadvantage, but are usually absent when amytal is administered in smaller doses, ranging from 7 to 12 grains (0.47 to 0.8 gram). In their experience with the intravenous administration of the drug the drop in blood pressure is a distinct disadvantage. Even with small doses this drop may be alarming, and may be sufficient to warrant postponement of the operation. They think it may be an evidence of an individual idiosyncrasy to the drug, and its possible appearance makes frequent observations on the blood pressure during the administration of the drug imperative. They conclude from their experience with its use in 150 general surgical cases that sodium amytal provides the normal induction of a natural sleep without the apprehensive struggling of a conscious patient. The preparation of the patient could be performed before the administration of the inhalation anaesthetic. There was a marked reduction in the amount of nitrous oxide required, and cyanosis was avoided. The amount of oxygen added to nitrous oxide could be increased, varying between 16 and 32 per cent. There was noted a marked reduction in the post-operative nausea, struggling, and pain. Those patients who had experienced other operations under ether anaesthesia claimed that sodium amytal rendered their present operation a pleasant experience in contrast to the ordeal through which they had previously passed. In operations upon patients with exophthalmic goitre, and upon very apprehensive, excitable patients, sodium amytal has, they believe, a very definite place in anaesthesia, and may be used in doses of 7 to 12 grains (0.47 to 0.8 gram) with definite advantage to the patient.

Mason and his associates,[24 29] using sodium amytal intravenously, called attention to the variation in individual susceptibility to the drug. They found that the minimum dosage required barely to erase consciousness varied frequently from 3 to 9 grains (0.2 to 0.6 gram), illustrating the impracticability of estimating the proper dosage. Factors of more importance seemed to be the age and general condition of the patient. It was found that old or debilitated persons may fall asleep after 3 to 5 grains (0.2 to 0.3 gram) have been given, whilst young robust patients may require 7 to 9 grains (0.47 to 0.6 gram) before they lose consciousness.

They used for the injection a very small hypodermic needle attached to a 10 c.cm. syringe. During the intravenous injection of the first 3 to 9 grains (0.2 to 0.6 gram), in a room that is perfectly quiet, the patient slips away into a sleep that certainly, to all appearances, closely resembles the physiological state. In only one instance was there any evidence of excitement during the induction of sleep by sodium amytal or during the induction of deeper anaesthesia by the superimposed inhalation anaesthetic. They observed that the effect was reached immediately upon injection; and by observation of the patient's reaction as the drug was administered, he could with safety be carried to any of three stages desired—namely, co-operative stupor, deeper unruly stupor, or total unconsciousness. They thought that the patient should not be allowed beyond the third stage, or the total loss of consciousness. The experiences of many others also bear this out.

From their experience with its use in 305 cases, they concluded that when the drug was used for the pre-anaesthetic preparation of the patient, with a dose just large enough to make the patient lose consciousness, it gave more satisfaction than any other drug used. In patients with hyperthyroidism, and in those who were nervous, sensitive, or apprehensive, it gave the most satisfying results. When the drug was given slowly and the administration stopped as soon as the patient lost consciousness, they considered that no serious or untoward effects would be experienced.

Heyd[30] reports thirty-five surgical cases in which sodium amytal was used primarily as an adjunct to anaesthesia. He suggests the following surgical indications for its use: hyperthyroidism, and laparotomies in which it is desirable to have relaxation with ethylene; kidney operations, using sodium amytal supplemented by ethylene; to produce unconsciousness wherever there is an emotional element of any degree before any type of operation; for the control of post-operative delirium or excitement; and as a pre-operative measure to promote rest in highly toxic goitre cases.

Lundy[31] reports the use of sodium amytal in 730 surgical patients, to whom the treatment was given by the mouth in doses of 6 grains (0.40 gram) to women, and 9 grains (0.60 gram) to men, one hour prior to operation. He observed little, if any, delirium; nausea was rarely seen, and there was no difficulty with respiration.

By the intravenous route he used it in large amounts, 457 times, to produce all or part of the anaesthesia

necessary to perform most of the various operations that are commonly done on man. He called attention to the dangers of too rapid injection of the drug. Following large doses he found that delirium, oedema of the lungs, pneumonia, and the inability to raise mucus after thyroidectomy, developed, and were definite reasons why the drug should not be employed as the sole anaesthetic.

Link[32] reported 460 surgical cases in which sodium amytal was used for the pre-anaesthetic preparation of the patient. He used an average dose of 12½ grains (0.83 gram) intravenously. He concluded that the drug should be given slowly, and in amounts sufficient only to produce sleep. The amount required was found to vary according to age, weight, and condition of the patient. Patients with hyperthyroidism required larger amounts. Post-operative nausea or vomiting was seldom seen.

Cabot, Maddock, and Lamb[33] reported a series of 172 surgical cases in which sodium amytal was given intravenously in the pre-anaesthetic preparation of the patient, supplemented by inhalation anaesthetics. They have given a complete résumé of the effects of the drug on the respiration, pulse, and blood pressure, with notations of the time required to recover from the effects of the drug. Of particular interest were their observations regarding the percentage of lung complications. In a series of ninety-three cases given ether, 15 per cent. developed lung complications; in a group given ethylene, the percentage was 4; in their series of 172 cases, in which sodium amytal was employed, the percentage was 6.5. There were no deaths directly attributable to sodium amytal.

Sise,[34] giving 9 to 15 grains (0.6 to 1 gram) intravenously, for the induction of hypnosis preceding the use of intraspinal anaesthesia, found it of definite advantage in a limited number of patients who were hypersensitive and who demanded to be unconscious. Brown,[35] Little,[36] Graham,[37] Ranson,[38] Aid,[39] Butt,[40] and others, have reported on their experiences with the intravenous administration of comparatively small amounts for pre-anaesthetic preparation of the patient.

Drabkin, Ravdin, Hirst, and Lapham[41] have reported on the use of sodium amytal by the rectal route in 33 obstetrical cases. They used comparatively large amounts, 25 to 30 mg. per kilo of weight. In ten cases the results were good, in seven fair, and in two they were poor. They found no effect on the rhythmic contractions of the guinea-pig uterus *in vitro* or *in vivo*. The uterus responded to oxytoxic principle.

When the drug is administered by the mouth or by the rectum about the same effects are observed as when the drug is given intravenously. A somewhat longer period is required to obtain the same effect; the drop in blood pressure is not acute, as by the intravenous method, and the duration of the effects are longer. The drop in blood pressure, following its administration by the mouth or per rectum, and the period for recovery from such a decrease, is apt to require a longer time.

De Takats[42] states that the protracted oral medication of barbituric acid derivatives resulted in just as many different responses as with the other forms of administration.

The uses of this drug, for purposes other than pre-anaesthetic preparation of the patient, include the control of convulsions as observed in tetanus, eclampsia, strychnine poisoning, status epilepticus, and cocaine and procaine poisoning. It has also been used in controlling patients with delirium tremens, unmanageable mental cases, and various post-operative psychoses. The reduction of the amount of morphine required for cases of inoperable carcinoma is also very gratifying. In one instance the amount of morphine used daily was reduced from 6 grains to 3/4 of a grain, by the addition of 6 grains (0.4 gram) of sodium amytal, given by the mouth at regulated intervals.

Contraindications.

In the field of anaesthesia, patients who are poor anaesthetic risks may be considered poor risks when sodium amytal is used for pre-anaesthetic preparation. Patients with hypertension, hypotension, generalized arteriosclerosis, elderly persons, and those who are weak and emaciated as a result of chronic illness are poor subjects for the use of sodium amytal. If it is to be given to patients of this type, extreme caution should be exercised in the rate of its administration, and particularly in the amount given.

Patients with pulmonary infections, lung abscesses, and bronchiectasis should not receive enough of the drug to interfere with the gag reflex, and it is better on the whole to use very small amounts, 3 to 6 grains (0.2 to 0.4 gram), preferably without producing a total loss of consciousness. The drug should also be given cautiously, or not at all, following very large doses of morphine, or in those patients particularly sensitive to morphine and drugs of a similar nature. Patients who are known to be hypersensitive to barbituric acid derivatives should not be given sodium amytal. Weiss[43] and others have pointed out the danger of keeping patients unconscious for a prolonged period of time with derivatives of barbituric acid administered by any means.

The intravenous administration of the drug should be stopped at once if an acute drop in blood pressure or a marked decrease in the amplitude of the respiration occurs.

Discussion.

Derivatives of barbituric acid have many characteristics in common, but differ largely in toxicity, and rate and manner of elimination. Lundy[44] has recently made an exhaustive review of the literature on this subject. The therapeutic margin of safety, based on experimental animal work, has been determined for a great many of these compounds. In clinical medicine we are interested to know the proportion of the fatal dose that will be required to produce a given effect. For all practical purposes that relationship is about the same for all the commonly employed derivatives of barbituric acid. Diethyl-barbituric acid (barbital) is frequently cited as being the least toxic of these compounds, mainly because the amount required to produce death in animals is relatively large. Should one desire to produce a given effect short of the fatal dose, the amount of barbital required would bear about the same relation to the fatal dose as that of a compound considered two or three times as toxic. Should subsequent sub-lethal amounts of barbituric acid be given before the entire amount was eliminated each time, barbital would ultimately prove decidedly more toxic than those compounds eliminated or destroyed at a faster rate. Fitch and his associates[45] state that there seems to be little advantage that can be claimed clinically for the intravenous use of one barbiturate over another, except in so far as the advantage lies in differences in the duration of depression and in the total quantity of the drug that the organism must destroy or eliminate.

The clinical reports on the use of sodium amytal and other derivatives of barbituric acid indicate that they have a wide field of usefulness when given in comparatively small doses, and for a definite reason.

Essentially the same degree of hypnotic action is obtained when sodium amytal is given by the mouth or per rectum, as that observed when the drug is administered intravenously. The respiratory and circulatory depression is less acute, but the peak effect of the drug may not be obtained when desired, and the rate of elimination or destruction is much slower.

The intravenous method carries with it certain disadvantages, such as the dangers from too rapid administration, more acute respiratory and circulatory depression, and the technical difficulties and dangers inherent in intravenous administration of drugs. However, the effects are obtained almost immediately; the minimum amount required for the individual patient may be judged more accurately; and the rate of elimination or destruction proceeds at a faster rate.

On the whole, I consider that for general use of this compound or other derivatives of barbituric acid, it is safer to give it by the mouth or per rectum, and that the intravenous use should be reserved for emergencies, where the effects are desired immediately, or in instances where the oral or rectal administration is not feasible. Likewise,

I consider that the intravenous method requires some experience and technical skill, and that the patients receiving such injections should be under close institutional supervision.

As is well known, no fixed rule can be used for calculating the dosage, and individual variations exist in man. This one point alone is sufficient to contraindicate the use of barbituric acid derivatives in large doses. It is considered, however, that doses of 3 to 9 grains (0.2 to 0.6 gram), not exceeding 15 grains (1 gram), are comparatively safe limits for sodium amytal. It is seldom necessary to use more than 7½ to 9 grains (0.5 to 0.6 gram).

In the field of anaesthesia there is ample evidence that sodium amytal is useful primarily as a hypnotic for the pre-anaesthetic preparation of the patient, and not as an anaesthetic agent. In the field of medicine it is useful for the control of convulsions, unmanageable mental cases, and as a specific for strychnine poisoning.

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A COMPARISON OF SODIUM AMYTAL AND PERNOCTON AS PRE-ANAESTHETIC HYPNOTICS.*

BY

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THE properties and use of sodium amytal are becoming so familiar through the work of Zerfas, McCallum, Kast, Lundy, and others, that more than a brief recapitulation of its advantages and drawbacks is unnecessary. This drug, when given intravenously in full doses, will, in many cases, produce complete anaesthesia without the use of any other agent; and, when the normal doses are not exceeded, is apparently without harmful effect. When the drug has to be supplemented by other local or general anaesthetic agents a much smaller quantity than usual will produce satisfactory anaesthesia. Higher doses cause a considerable fall in blood pressure, as much as 50 per cent. in some cases, though the average is 25 per cent.

Pernocton is the sodium salt of secondary beta-bromallyl-barbituric acid. Its pharmacological action and clinical effects resemble very closely those of sodium amytal, with several important exceptions.

A number of cases in which hypnotic doses of sodium amytal were given were analysed. Dosages varying from 5 to 12 grains and averaging 9 grains, caused an initial fall in systolic blood pressure, which ranged from 10 to 40 per cent.; the average fall was 14 per cent. Not one of our cases in which pernocton was given showed a fall in blood pressure. As the doses were limited to produce only hypnosis all our pernocton cases were included in this series. Falls in blood pressure of 5 per cent. or less were disregarded as being within the range of error in making the determination.

The hypnotic effect of pernocton seemed to be more powerful than that of sodium amytal, the average dose of which required to produce unconsciousness was 9 grains. The average dose of pernocton used to produce the same effect was 4½ grains. It would seem, therefore, that this drug has about twice the hypnotic action of sodium amytal.

The recovery phase comprised three fairly definite intervals. The complete unconsciousness following a hypnotic dose of pernocton closely resembled natural sleep, and varied in length up to seven hours with an average duration of two hours. From this stage the patient gradually drifted into semiconsciousness, although nearly half were already in this condition, immediately upon leaving the operating table. They could be roused to answer questions, or to take fluids, nourishment, and medicine, but would soon lapse into sleep again when left alone. Perception of all external stimuli was dulled, and with the attainment of complete recovery there was usually no recollection of events that had taken place previously. Restlessness during this period occurred only in 3 per cent. of patients, and was easily controlled by small doses of morphine. This affords a very marked contrast to patients who had received sodium amytal, half of whom showed more or less restlessness, and several required forcible restraint. While it is true that the post-operative excitement seen during recovery from sodium amytal can usually be controlled satisfactorily by the prompt administration of morphine, it requires special nursing and constant vigilance during the whole recovery period.

This period merged gradually into a third stage of recovery, in which the patient had full perception and was quite conscious, but felt somewhat drowsy and "dopey." The administration of morphine and other sedative drugs will modify and prolong these stages of returning consciousness. In general, the recovery period was of half the length, and was characterized by much less restlessness than is associated with sodium amytal.

Two patients in our series vomited considerably, one immediately after the injection and one post-operatively. Though other factors might have been responsible, it was felt that pernocton played some part in this post-anaesthetic sickness, and we attributed it to undue haste in making the intravenous injection. These were among our first cases; since then we have had over one hundred additional cases, none of whom vomited or showed any tendency to nausea. No vomiting followed the use of sodium amytal, and no respiratory depression or pulmonary oedema was seen.

* A paper read in the Section of Anaesthesia at the Annual Meeting of the British Medical Association, Winnipeg, 1930.

Dosage and Administration.

Pernocton is administered intravenously in 10 per cent. solution. It is put up in ampoules containing 2.2 c.cm. ($3\frac{1}{4}$ grains) of the solution, and is ready for injection without any dilution, mixing, dissolving, or other manipulation. As the average hypnotic dose is only $4\frac{1}{2}$ grains it can be seen that the volume of the usual injection will be about 3 c.cm. It is given at the rate of 1 c.cm. per minute, and this smaller volume results in a saving of time, and cuts short a rather tedious procedure.

The *p*H of the solution is 9.8, as is that of sodium amytal; the injection must be given slowly to prevent concentration, and to allow dilution and absorption in the blood stream. The dosage as recommended by Bumm averages 1 c.cm. for every 30 lb. of weight, with a total average of 4 to 5 c.cm.; this dosage presumes that no other anaesthetic is being administered. Since the majority of our patients received morphine in some form also, we were able to obtain the same satisfactory results with smaller doses of pernocton.

As in the case of sodium amytal, many fractures could be painlessly reduced with the help of pernocton, and other minor procedures be carried out without the aid of any other anaesthetic. The use of pernocton in obstetrics will be reported upon subsequently, since we have not yet sufficient cases to draw definite conclusions in this respect.

Summary and Conclusions.

Pernocton (sodium secondary-butyl beta-bromallyl-barbituric acid) is a synthetic barbiturate resembling sodium amytal in its composition and action. It has all the advantages of sodium amytal as a hypnotic, and in addition there is: (1) almost complete absence of restlessness and excitement during the recovery period; (2) no fall in the blood pressure; (3) a more powerful hypnotic effect; (4) a solution prepared ready for injection; (5) a smaller volume to be injected; (6) a shorter period of unconsciousness; and (7) better and earlier co-operation during the recovery phase.

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INTRAPERITONEAL GESTATION WITH RECTAL HAEMORRHAGE.

BY

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ALTHOUGH extrauterine gestation is, unfortunately, a not exceedingly uncommon accident, cases are rare of such a conception persisting more than a few weeks. Death of the ovum with its expulsion as a tubal mole, or rupture with its attendant train of acute phenomena, usually terminates the pregnancy; or possibly pain, and maybe unexpected irregular vaginal loss, arouse the patient's suspicions that all is not proceeding as it should. For women are learning to-day that the normal pregnancy should follow certain definite lines, and that any gross departure therefrom should call for a medical examination.

An ectopic gestation persisting for any length of time is bound to cause considerable disturbance in that portion of the abdomen or pelvis within which it is situated. How disastrous these disturbances may be is illustrated by the following case.

A multipara, aged 27, who had had three previous normal pregnancies, was admitted to Hackney Hospital on January 26th, 1928, stating that she was six months pregnant, was suffering from severe pain in the lower abdomen, and had that day commenced bleeding per vaginam. Her last regular monthly period had been six months previously, and, though she was certain that she was pregnant, her pregnancy had by no means followed a normal course. On careful questioning it transpired that her amenorrhoea had not been complete. She had had several small attacks of bleeding, and a more or less continuous yellowish vaginal discharge. All the time she had suffered from malaise, and from an almost constant lower abdominal pain and backache. This pain had had several exacerbations, which necessitated her lying up from time to time, but until three days before admission she had not had any really acute attack of pain. Her acute history dated from January 23rd, when she was seized with a violent pain in the left iliac fossa, and felt very ill; she was admitted to hospital three days later with a temperature of 101.2° F., a pulse rate of 140, and passing clots per vaginam.

On examination she looked ill, and was very pale. The breasts were active. All the lower part of the abdomen was held rigidly, and was very tender on palpation, especially in the left iliac fossa. Rising from the pelvis was a tumour, reaching almost to the umbilicus, and extending over towards the left side of the abdomen. It was non-fluctuant and dull to percussion. A souffle was audible about one and a half inches below the umbilicus, but not over the position of the uterine arteries. On admission the uterus was not felt apart from the tumour, but when the muscles were relaxed under anaesthesia this physical sign, as will be seen later, proved to have been erroneous. The tumour was not felt to contract under the examining hand. Foetal heart sounds were not heard, nor were movements detected. On vaginal examination clots of blood and a vaginal discharge were found to be present; there was tenderness in the anterior fornix, and the os uteri admitted a finger-tip. Bimanually, movements were not transmitted from the swelling to the cervix.

The following day an anaesthetic was administered, primarily with a view to a more thorough examination. As the patient was being placed in the lithotomy position before the vaginal examination she passed 20 oz. or more of bright blood per rectum. A rectal examination revealed nothing to account for this. With the abdominal muscles well relaxed the uterus was now felt as a separate entity, lying well to the right side, and enlarged to about twice its normal size. A uterine sound confirmed this. In view of the copious rectal haemorrhage an immediate laparotomy was performed.

Adherent to the abdominal wall below the level of the umbilicus, and above the left broad ligament, was a sac, which when opened proved to contain a very offensive fluid mass of faeces, blood, and liquor amnii, together with a partially macerated foetus, the whole showing evident signs of infection. The foetus measured 17 cm. from vertex to buttocks and was well formed. The placenta was seen in the left lower aspect of the sac. Severe haemorrhage from large vessels which lay around the placental site and in the wall of the sac negatived any intervention beyond rapid removal of the foetus, marsupialization of the sac, and firm packing. A pint blood transfusion of 400 c.cm. was given that evening. There was little further bleeding from the very offensive wound in the abdomen, but there was extensive bleeding per rectum, and the patient died on the following evening.

A post-mortem examination was performed. Most of the lower abdomen was found to be occupied with a sac, situated in the abdominal cavity above the left broad ligament, formed by omentum, transverse and descending colon, caecum, and the anterior abdominal wall. The placenta was adherent to the abdominal wall in the region of the left iliac fossa and to the descending colon. It measured about three inches in diameter. The left tube and ovary could not be identified. A perforation which admitted a finger connected the sac with the descending colon, and the whole colon and caecum were distended with blood. No other perforation existed. In spite of the fact that at the operation the general abdominal cavity was opened, there was no evidence of peritonitis in the upper abdomen.

Certain features in this case appear to call for special comment. Communication of the sac of an ectopic gestation with the bowel, particularly the rectum, has been recorded previously. The remarkable fact seems to be, not that such perforation did occur, but that, the sac being situated in the position in which it was, this rupture did not occur earlier. Cairns Forsyth[1] and Schwartz[2] record cases of perforation of an ectopic gestation into the rectum, and in both cases the age of the foetus was about six weeks. It is also interesting to note that in both these cases the symptom which most imperatively called for surgical intervention was rectal haemorrhage. Schwartz in the description of his case, in fact, remarks: "Dans tous les cas, c'est l'existence d'une abondante et subite haemorrhage rectale qui a commandé l'intervention."

Needless to say, except for the close proximity of the rectum and descending colon on the one side, and the caecum on the other, there is no reason why the bowel should be involved more than any other viscus. The

bladder has been eroded in more than one case, and Gayet[3] describes a case in which, after two years, a four months foetus was voided piecemeal per urethram, having during that time remained incarcerated in a sac adherent to the bladder, eventually forming a false diverticulum.

That there was no definite attack of acute pain during the patient's pregnancy to suggest that at that particular time tubal extrusion had occurred is another curious point. The oösperm must have been expelled at a very early date without any very acute symptoms to point to the event, for her pregnancy presented a fairly continuous and uniform story of general malaise and pain persisting until the final very severe attack which resulted in her admission to hospital.

Whether a primary abdominal pregnancy ever occurs is very doubtful. It is safer and less controversial to assume that a tubal gestation was extruded into the abdomen, the actual moment of extrusion having been missed in the general abdominal pain and discomfort attending the abnormal pregnancy.

Again, with the sac containing the foetus situated as it was so close to the bacteria-laden descending colon, it seems rather surprising that infection should have supervened at such a relatively late period. For, by comparison of the period of comparative amenorrhoea by which the patient dated her pregnancy with the development of the foetus, the latter must have been lying dead in the sac for a full month. That infection does occur and produce serious developments in these cases is shown by a case recorded by Skinner[4] in which the placenta was attached to the liver, and infection of the sac, presumably from the adjacent bowel, ensued with a foetus of the twenty-fifth week. It is a great testimony to the resistance of the peritoneum that this infected cesspool, for it was little else, could have remained so localized in the lower abdomen with no inflammation in the remainder of the abdominal cavity.

There remains the fact of the massive dilatation of the whole of the large bowel with blood, as discovered at the post-mortem examination, although there was no perforation or haemorrhage discovered into the colon at any point proximal to that described. One can only suppose that in the generally collapsed state of the patient shortly before death, continued haemorrhage passively distended the colon, which simply acted as a reservoir, being unable actively to expel its contents owing to the atony preceding dissolution.

In conclusion, I should like to express my thanks to Dr. W. Brander, late medical superintendent of Hackney Hospital, for permission to publish this case.

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A FAMILY TENDENCY TO TALLNESS OF STATURE, OBESITY, AND DIABETES.

BY

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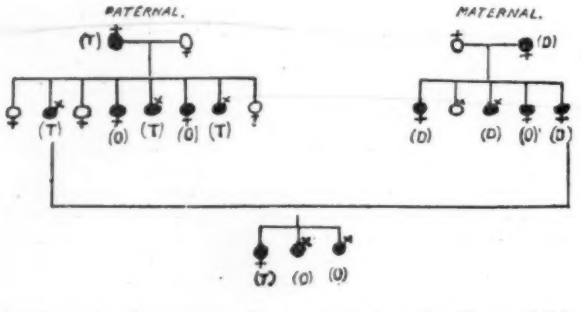
THE family described consisted of a father, mother, daughter, and two sons, the father being a well-proportioned man over six feet in height. The mother, aged 44, had had glycosuria since she was 21 years of age. It was mild in character, associated with obesity, and was readily controlled by dieting. A sugar tolerance test gave a diabetic curve. The children showed a disorder of growth and nutrition. On inquiry, many of the relatives of both parents were found to be similarly affected. The following diagram indicates the occurrence of obesity (O), diabetes (D), and tall stature (T), among the members of both families, paternal and maternal.



An opportunity occurred of examining the three children of the present generation, and a short account of each is given.

The Daughter.

History.—Aged 21. Rapid growth in early teens. Easily tired and subject to headaches. Shy and nervous disposition. Menstruation began late, at the age of 17–18; the discharge has always been scanty in amount, scarcely lasting more than an hour, and accompanied by severe pain.

Examination.—Height 5 ft. 10 in.; weight 11 st. 2 lb. (in clothes; average weight would be about 10 st. 8 lb.). Fat not excessive, and evenly distributed. Tall stature, with broad chest and pelvis. Hands and feet in proportion. Hair distribution normal, but under-developed for her age. Blood pressure 125/70 mm. Hg; pulse 88; temperature 98° F. Visual fields, optic discs, and pituitary fossa normal. Urine sugar-free. A sugar tolerance test (60 grams of cane sugar on a fasting stomach) gave a normal result: Fasting, 0.09; 30 minutes, 0.15; 1 hour, 0.09; 1 hour 30 minutes, 0.09; 2 hours 0.06; 2 hours 30 minutes, 0.05; 3 hours, 0.07.

The Elder Son.

History.—Aged 18. Tendency to put on flesh was first noticed at the age of 10. In the last year, in spite of dieting, he has gained 2½ stone. He is inclined to fall asleep during the day, and has difficulty in wakening in the morning. Temperament irritable.

Examination.—Height 5 ft. 10 in.; weight 17 st. (in clothes; average weight would be 10 st. 8 lb.). His appearance resembles that of a man of 30 years of age. He has copious hair, with male type of distribution. Average genital development; mature sexual desire. Gross obesity, the fat being distributed mainly round the hips and shoulders and on the breasts. Blood pressure 138/70 mm. Hg; pulse 64; temperature 97° F. Visual fields and discs normal. An *x*-ray examination of the skull revealed a normal pituitary fossa and normal epiphyseal closing in the long bones. Urine sugar-free. Sugar tolerance slightly increased: Fasting, 0.09; 30 minutes, 0.14; 1 hour, 0.08; 1 hour 30 minutes, 0.09; 2 hours, 0.09; 2 hours 30 minutes, 0.09; 3 hours, 0.08.

The Younger Son.

History.—Aged 15. Is said to have weighed 14 lb. at birth. Noticeable gain in weight at 6 years of age. Frequent headaches, but no somnolence. He is of a placid, gentle disposition.

Examination.—Height 5 ft. 11¾ in.; weight 16 st. 2½ lb. (in clothes; average weight would be about 11 stone). The skin on the trunk and limbs is hairless and smooth. On the pubes the hair distribution is feminine in type. The genitals are below the average for his age. Gross obesity, with a distribution similar to the elder brother. Blood pressure 130/70 mm. Hg; pulse 88; temperature 98° F. Visual fields, discs, and *x*-ray film of skull normal. Normal epiphyseal closing. Urine sugar-free. Slight increase of sugar tolerance: Fasting 0.09; 30 minutes, 0.13; 1 hour, 0.10; 1 hour 30 minutes 0.11; 2 hours, 0.09; 2 hours 30 minutes, 0.09; 3 hours, 0.07.

REMARKS.

The association of obesity, genital hypoplasia, and lack of growth with a pituitary tumour was first noted by Fröhlich[1]; later, the relation of these symptoms to the anterior lobe of the gland was confirmed by the experiments of Paulesco,[2] Cushing,[3] and others. It was also recognized that such symptoms could be produced by a simple disturbance of function alone without a tumour being present. Dott[4] found that the removal of at least two-thirds of the anterior lobe was necessary to produce effects in animals. No results followed excision of the posterior lobe, though subsequent increase of carbohydrate tolerance was observed by Cushing. In a recent clinical review Engelbach[5] states that increased functional activity of the anterior lobe, before puberty, leads to tall stature and gigantism, and to acromegaly in adult life. The

reverse action produces infantilism, genital hypoplasia, amenorrhoea, and sterility. Overactivity of the posterior lobe may cause decreased sugar tolerance and glycosuria, and underactivity increased tolerance and obesity.

These principles may be broadly applied to the three children examined. The daughter grew rapidly at first, but the onset of menstruation was delayed and the monthly loss is now scanty. The inference in her case is that there was increased activity of the anterior lobe at first, followed later by underactivity. The absence of obesity, glycosuria, and a normal sugar tolerance suggests that the posterior lobe is functioning normally. In the two sons the main feature is the extreme obesity which is distributed in the pituitary fashion, mainly girdlewise. Sugar tolerance is only slightly increased. The skeletal and sex development differ, but both are abnormal in these respects. It appears probable, therefore, that there is a bilobar dysfunction in their cases. Except for headache, there were no symptoms of increased intracranial pressure or tumour. In all three the symptoms were such as might be expected from a single disorder of function alone. Similar cases have been described in a paper by Langmead and Calvert,[6] and in another by Gardiner-Hill, Jones, and Forest-Smith.[7] The latter authors noted that the obesity had existed since birth in about one-third of their cases, and that it had often followed an acute infectious fever in the remainder.

The family as a whole is of interest in showing a tendency to endocrine disorder. Rahlfs[8] has reported a case of three brothers, two of whom were obese and under-developed. The tendency appeared to have been transmitted from the mother's side. Troisier and Monnerot-Dumaine[9] described a family in which obesity had affected the females of three generations. In the instance described here there is tallness and obesity on the paternal side, and diabetes and obesity on the maternal. Though such tendencies are usually corrected by intermarriage, the union of the two families in the present case has apparently intensified some of the features which they had in common, as is seen in the three abnormal children. Their appearance suggests a disturbance of pituitary function, and it may well be that the less defined complaints of their forebears were caused by a similar underlying pituitary disorder.

Grateful acknowledgements are due to Dr. G. Bark of Wallasey, by whom the cases were referred for investigation, and to Mr. A. J. Leigh, who made the estimations of blood sugar.

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ULTRA-VIOLET LIGHT IN THE TREATMENT OF THE DULL AND BACKWARD CHILD.

BY

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WHEN I first used ultra-violet irradiation for the various physical disabilities of children, I was struck with the marked improvement in the mentality in many of the cases treated. I am sure that it must be quite a common experience for the actinotherapist to note the change in the clinical picture. The puling, querulous, irritable, anaemic, self-centred, sleepless child, who is often pot-bellied and emaciated, is transformed into a robust, well-nourished, and perfectly healthy little animal, full of life and gaiety; all this happens within a few weeks.

The following observations were made at one of the Home Office schools, which makes a specialty of training and educating dull and backward boys and borderline cases of mental deficiency. The school stands on an elevation in Norfolk, and is a perfect "sun trap." Due to the hygienic conditions under which the boys live, and the active sympathy and co-operation of the head master and his staff, the results are remarkably successful, in regard to both physical and mental development. The same standard of improvement could not be expected to obtain in every case, but with the exception of those boys who turn out to be definitely mentally deficient, it is very exceptional to find one who has not shown signs of both physical and mental development.

Such a case was brought to my notice a few months ago by the head master, who suggested that the boy might accompany a batch of boys who were coming to me for light treatment on account of their skin conditions. I append the reports of the school staff at the date of the boy's admission to the school and immediately before the treatment was commenced, the details and dates of the treatment, and an extract from the report on the boy's present condition from the same source.

On Admission.—A. B., in February, 1928, was a miserable, sickly child, nervous and ready to whine when addressed, lifeless, and with little interest in games or anything in particular. His work in the schoolroom was poor, and his power to concentrate was weak. He made a certain amount of progress, but much less than that of a normal boy.

Before Actinotherapy.—The only time he showed interest in anything was when he was in the swimming bath; he could swim and dive fairly well. An interview of any kind was a terrible ordeal for this lad; "Yes sir," and "No sir," was about all one could extract from him.

Treatment.—The mercury vapour lamp used for the treatment of this patient was that designed by Dr. Percy Hall. General exposures were given, both front and back, at a distance of 30 inches. The durations of the exposures were as follows: March 21st, 3½ minutes; March 25th, 5 minutes; March 28th and April 1st, 7½ minutes; while ten-minute exposures were given on April 4th, 8th, 11th, 15th, 17th, 22nd, 25th, and 29th.

Subsequent Report.—A. B. seems to have begun really to live and enjoy life like a normal boy, and he is making much more rapid progress educationally; he concentrates better on all his work, and especially woodwork. He now takes an interest in games, swims and dives with real energy, and has added a backward somersault to his attainments in the swimming bath. He is certainly much more cheerful; going on home leave among his friends never had this effect. We are now seriously considering entering samples of his woodwork into an open competition. In July, 1929, his weight was 68½ lb., and his height 4 ft. 8 in.; In October his weight was 69 lb., in December 70½ lb., in March, 1930, 70 lb., in June 73½ lb., and on August 12th 74¼ lb. He has gained one inch in height.

If this was the only case so benefited I should not have ventured to plead for further trial by other workers in this field. I have had other results equally successful, but not so typical, and therefore not so sufficiently illustrative of the point I wish to make.

From some years of experience I know that splendid results may be achieved simply in the "lower class" dull and backward child by change of environment, plenty of wholesome, nourishing food which is temptingly prepared, fresh air, sunlight (including sun-bathing), and hygienic accommodation. When to these is added the assistance of a school staff specially trained in the work, very satisfactory results ensue almost without exception, but, as in the case here reported, some little extra treatment may be required to put the exceptional child in the way of becoming a useful citizen. In cases of unsatisfactory progress the mercury vapour lamp may prove to be of remarkable value in the therapeutic armamentarium.

I make no claim to having had a large experience of this class of case, but the results are so satisfying that I cannot urge too strongly that those who have to deal with this type of child institutionally should at any rate give the treatment a fair trial. Further, it is quite reasonable to assume that even the mentally retarded children of the better classes would benefit by this treatment in the same way as do others. At the moment there is no definite line of demarcation between the dull and backward and the mentally deficient type. Bearing in mind the present case, it is reasonable to assume that patients may be occasionally selected and their standard of mentality be considerably raised by actinotherapy.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

NOCTURNAL INCONTINENCE IN CHILDREN.

The treatment of nocturnal incontinence in children is eminently unsatisfactory. The distress of mind caused to parent and also to child as soon as it is old enough to realize its disability calls for the publication of any method of relief which has proved successful in several cases.

The time-honoured method of getting the child to empty its bladder on going to bed and of awakening it in an hour or two to pass water, of withholding all drinks after 5 or 6 p.m., and of fixing reels to the child's back to prevent it lying supine, have in my hands proved unsuccessful. I have administered tincture of belladonna up to 30 minims three times a day on the advice of textbooks I have consulted; I have removed tonsils and adenoids and given thyroid; I have tried strychnine and arsenic. With these methods I have had no success whatever.

I have elicited the fact that children who wet the bed at night have also very irritable bladders by day. At home they are constantly running to the lavatory; at school they are constantly asking permission to leave the room. The obvious prophylaxis, then, is to bring the bladder under control. I have therefore insisted on parents training their children to empty their bladders at fixed hours. The child is not permitted, at first, to pass water for two hours, then for three hours, then for four, and so on. When the child can hold its water for four or five hours, the nocturnal incontinence disappears. The bladder becomes trained, just as the rectum can be trained to function properly.

Exeter. J. Perfira Gray.

PULMONARY GANGRENE FOLLOWING LINGUAL CARCINOMA.

In view of the investigations which are being carried on under the auspices of the British Medical Association into the condition of cancer of the tongue, the following case, complicated by gangrene of the lungs, is not without interest.

A man, aged 44, came under my care on November 22nd, 1929, with a gummatous ulcer of the tongue of four weeks' duration; it was alleged to have been caused by the irritation of the right lower canine tooth. He was given antisyphilitic treatment. In April, 1930, it was recognized that epitheliomatous degeneration had set in, and the lesion was regarded as inoperable. The patient was by then confined to bed.

The ulcer was about the size of an almond, with heaped-up irregular edges, and situated at the right edge of the tongue about its middle. Around the ulcer the tissues were indurated. Over the surface of the tongue there were marked evidences of leucoplakia. The right submaxillary lymphatic glands were enlarged, as also were the posterior cervical glands, those on the right side being more prominent than those on the left. The tongue could not be protruded beyond the line of the teeth, which were very carious. The speech was thick and slurring. Sedatives were necessary to alleviate the pain of the ulcer. The Wassermann reaction was positive.

At 4.30 a.m. on May 15th the patient was seized with a severe coughing bout, which was accompanied by the expectoration of bright red blood. Feeling stifled, the patient began to pick bits of lung out of his mouth. The attack lasted about forty-five minutes. The chamber pot, which was shown me when I arrived, was bespattered with bright red blood, and, in addition to pieces of foul, greenish-black lung tissue, there was a single piece of lung tissue about 6 inches long and about 4 inches in its greatest breadth. It was also greenish-black in colour, parts of it being streaked with thick yellowish mucus, other parts with blood. The patient, when questioned, alleged he had picked this piece of lung tissue out of his mouth with both hands. Inadvertently the contents of the dish were burned. These findings were confirmed by Dr. M. L. M. Thomson of Heworth, co. Durham.

When I examined the patient I found he was lying in bed quite passive. His pulse was 106, and the temperature 98° F. Rales and rhonchi were scattered over the front of the chest. At 11 a.m. the patient had another profuse haemoptysis, again accompanied by the coughing up of small pieces of lung tissue. A foul odour permeated the whole room. Thereafter the patient's condition became quite passive, except for the presence of cough; the sputum, in a small receptacle, separated into three distinct layers, there being greenish-black shreds at the bottom, above them a brownish purulent layer, and on the top a layer of mucus. The patient died on May 25th, there being no further developments prior to his death.

The chief interest in the case lies in the relatively large piece of sloughing lung tissue which came away ten days before the patient's death.

Edward Collier, M.B., Ch.B.Glas.

Felling-on-Tyne, Durham.

ECLAMPSIA WITH UNUSUAL SYMPTOMS.

The following case illustrates the importance of determining the systolic blood pressure immediately the slightest trace of albumin appears in the urine, and the difficulty of recognizing the potential eclamptic subject.

The patient, a 2-para, aged 27, first attended the ante-natal department of the Leeds Maternity Hospital on March 21st. Nothing abnormal was noted at this or at subsequent examinations until May 30th, the thirty-second week of gestation, when the urine contained a slight trace of albumin. The patient's systolic blood pressure at this time was 142, and in the circumstances she was given advice about rest, diet, and danger signals, and told to report again in a week's time. On June 6th the amount of albumin in the urine was increased and the patient had some oedema of the ankles and a systolic blood pressure of 170. With great difficulty we persuaded her to come into hospital at once—namely, 11.30 a.m. The only facts worth recording in her previous history are that she had diphtheria at the age of 9, anaemia at 25, and had had a stillborn child with spinal bifida at full term in June, 1929.

When the patient was admitted the regimen prescribed was bed, purgation, and a diet consisting only of water. Later the same day she complained of epigastric pain and headache, and at 4.30 p.m. she suddenly had two eclamptic fits separated by an interval of fifteen minutes. Morphine 1/4 grain, atropine 1/100 grain, and veratrone 1/4 c.cm. were administered intramuscularly, and lavage of the colon was carried out. At 11.30 p.m. she had two more fits in rapid succession, and during the second fit was delivered of a stillborn female child with hare-lip and a depressed nose. The placenta was small, bluish, and friable, and infarcted in many places; the cotyledons were flattened and the membranes were intact.

The next day the patient was jaundiced. Small petechial haemorrhages were present over the abdomen and flanks, but she suffered no visual disturbances, and no enlargement or diminution of the liver was detected. Her condition gradually improved; she took fluids, passed urine, had diminished oedema, and the blood pressure came down lower each day. On the fourth day of the puerperium the jaundice was slight, the petechiae had faded, the systolic blood pressure was 148, and the patient's general condition was so much better that she was allowed a little tea and toast. The next day, however, she felt not so well, her bowels acted several times, and at midnight she had three successive eclamptic fits without regaining consciousness between. Morphine, atropine, and veratrone were given; no colonic lavage. Up to date the bowels had been acting three to seven times daily.

The following day the jaundice was more marked, the areas of petechial haemorrhage showed large blotches, and at 5.30 p.m. the patient, who had been rather restless and dazed, vomited bile-stained fluid. She passed very little urine, and the amount remained scanty. The area of liver dullness was still normal. A day later—namely, the seventh day of the puerperium—the abdomen was distended, and gradually, in spite of treatment, became more so. The systolic blood pressure was now 125. The patient gradually passed into coma, and on the eleventh day of the puerperium she died. The systolic blood pressure had fallen to 98, the coma had deepened, and the abdominal distension had persisted. Unfortunately, permission to hold a post-mortem examination was not granted. Beyond the details already mentioned the treatment consisted of the administration of diuretic drugs, turpentine enemata, and eserine, dry cupping, linseed poulticing to the loins, and the injection of intravenous saline with 5 per cent. glucose.

The point of special interest in this case is the occurrence of eclamptic fits on the fifth day of the puerperium in spite of: (*a*) the absence of marked oedema; (*b*) the fact that the urine was at no time solid with albumin (though the absence of diuresis is to be noted); (*c*) the steady fall in the blood pressure; and (*d*) the ease with which the bowels were made to act. Unfortunately we have no answer to the question: What would have happened if hospital treatment had been adopted on May 30th?

I am indebted to Mr. A. M. Claye for permission to publish this case.

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Reports of Societies.

THE TREATMENT OF HEADACHE.

At the November meeting of the Chelsea Clinical Society, with Dr. F. J. McCann in the chair, Dr. Anthony Feiling opened an informal discussion on the treatment of headache.

In the course of some remarks on syphilitic headache Dr. Feiling said that if the headache was dependent upon an acute syphilitic meningitis, or rather acute syphilitic endo-arterial changes, he had seen considerable harm follow the treatment of the patients too actively, in the first instance, with salvarsan and other preparations of that kind. It was far wiser to give the patients for a week or ten days a preliminary course of iodides in increasing doses before using salvarsan preparations. He added that the old statement that syphilitic headache was principally nocturnal was by no means true. One very important group of headaches was due to organic affection of the brain. These were headaches produced by injuries to the head, sometimes not severe; they followed concussion and contusions of the brain. They were found nowadays with increasing frequency as the result of motor accidents. There was not the least doubt that a great many patients who had suffered from concussion, and in many cases also from contusions of the brain, were improperly treated, not as the result of advice or lack of it by their doctors, but because of their own obstinacy; it was impossible to make them take sufficient rest afterwards. Some of these headaches were extremely persistent, and resisted almost every treatment. The form of treatment to which he was specially inclined was the use of hypertonic solutions. If a hypertonic solution was injected into the circulation, one of its effects was to cause a diminution in the volume of the brain. In the type of case to which he was referring —namely, these severe post-contusional, or post-concussional states—relief of the headache was obtained with the diminution in the brain volume. A number of solutions were available for this purpose. A solution might be given of as great a concentration as 30 per cent. of sodium chloride in distilled water, and it was possible to inject as much as 100 c.cm. of such a solution intravenously; but it was seldom necessary to employ such a highly concentrated salt solution as that. Much good resulted from the administration of a 15 per cent. solution of sodium chloride in distilled water; it was important that both should be pure, and that the intravenous injections should be given slowly. From 50 to 100 c.cm. of such a solution might be introduced. Another very useful form of hypertonic solution contained glucose; a 50 per cent. solution could be given in the same way, and was specially valuable when dealing with patients who had had more or less severe head injuries and were in a state of cerebral irritability. The glucose itself had a certain advantage in combating shock and acidosis, as well as a certain nutritive value in patients who were unable, on account of coma or semi-coma, to swallow ordinary food. In the milder states of these headaches one might get, not such rapid, but quite satisfactory, results with a highly concentrated solution of magnesium sulphate given by the rectum. A 50 per cent. solution of magnesium sulphate might be used, and from four to eight ounces be injected into the rectum slowly, with the idea of allowing the fluid to be retained as long as possible. When giving injections of hypertonic solutions of this kind it was also important, from the practical point of view, that the amount of fluid taken by the patient should be curtailed. These injections produced a certain amount of thirst, and if the patient were allowed to satisfy his thirst fully a good deal of the benefit would be prevented.

Another form of headache was sometimes called "lumbar puncture" headache. In many neurological conditions it was very desirable, sometimes essential, to perform a diagnostic lumbar puncture, and it was most unfortunate if such a procedure should be followed by extremely severe headaches. It was therefore very important that every available method be adopted to prevent this, or to render any headache as slight as possible. It was essential to perform the puncture with the patient lying down and not sitting up; also to use a proper needle (a great many of the needles sold were quite unnecessarily large and clumsy). The patient should be put to bed afterwards and kept there for twelve hours, with the head low. Perhaps it was of some value to give a large cup of tea or a pint of water immediately after the puncture. Occasionally a commencing headache might be averted by a hypodermic injection of atropine. One form of what the patient called "headache" was due to organic affection of the structures covering the head. This pain in the head was due to some fibrositis or similar condition affecting the aponeurosis attached to the scalp, and was specially common along the line of the occipital crest. It was more common in women than in men, and especially in women of middle age, at about the time of the menopause. The most important methods of treatment in these cases were various physical methods such as massage and local applications of heat. Vibro-massage was also useful. In the more obstinate cases relief might be obtained by the local injection of strong alcohol into the tender points. One had almost to shave the area where the pain was felt to make sure that the alcohol, preceded by an injection of novocain, was injected only into the very limited area where the tender spot was situated.

Dr. Feiling next turned to headaches due to high blood pressure. One of the most important elements in the treatment of these cases was rest, perhaps not so much physical as mental. With regard to the drug treatment of headaches due to high blood pressure, whenever possible it was better to do without recourse to drugs of the pure vaso-dilator type; they sometimes made the headache much worse. He preferred to rely, in the first instance, on eliminative treatment in the form of purgation, and "blue pill" was often particularly valuable if there were no contraindication to its use in the shape of advanced disease of the kidney. In many cases relief of headaches in high blood pressure would follow the use of ordinary bromides. He had used two quite old-fashioned drugs with considerable benefit in this type of case, especially with chronic interstitial nephritis—namely, cannabis indica and antimony wine. Diathermy was capable of lowering the blood pressure to a certain extent, and thus relieving many of the symptoms. Headaches due to low blood pressure were a great deal more difficult to relieve; pituitary extract might have some value. Chlorosis was said to have disappeared from medicine, but he felt sure that there were many minor degrees of chlorosis still to be found and largely unrecognized. A considerable number of cases of minor chlorosis were found among young women who worked in banks and shops; the chief complaint was headache, and often nothing more. On the large subject of mental or emotional causes of headache he could hardly touch, though to the ordinary man in practice these cases made up a large proportion of those for which he was asked to prescribe. Whatever theories one might hold about the mechanism of the production of symptoms in migraine, there was not the least doubt that every case should be regarded as an individual problem for treatment. Migraine in children could often be improved in the sense that the attacks could be rendered less frequent and less severe when they did occur by the adoption of the line of treatment recommended in so many cases of asthma in children—namely, treatment with glucose. He had had several cases in children where the regular administration of glucose had certainly seemed to prevent the frequency, at any rate, of attacks of migraine, but in grown-up persons he had not found the treatment to be of any value at all. He supposed that migraine was an allergic disease, analogous to asthma. Many attempts had been made to identify the particular cause. He could not say that he had succeeded in alleviating many cases of migraine along that line of treatment. A line of treatment was now being pursued on the hypothesis that the condition was due to some liver deficiency; the treatment consisted of the administration of concentrated salts of magnesium sulphate either by the mouth, or, better still, by duodenal

intubation. He had not had the opportunity of treating many cases himself, but he thought it deserved more extended trial. In migraine there were certain old-fashioned remedies which were of value in diminishing the frequency and the severity of the attacks. Small doses of luminal were of great value in many patients.

In the course of discussion, Mr. C. J. H. Gunning said that very few errors of refraction were responsible for headaches. Myopia did not give rise to this complaint. When astigmatism caused headache it was usually when the axis of the cylinder was oblique, seldom when the axis was vertical or horizontal, and even in those cases of oblique astigmatism there were some in which full correction would still fail to relieve the symptoms. Dr. Ernest Young said that the so-called "bilious headache" was in his opinion due to some degree of hepatic insufficiency. He found that many sufferers from these toxic conditions were people—girls especially—whose liquid intake was insufficient—less than a pint a day. If these patients were put on two or three pints of water a day, together with perhaps a simple rhubarb mixture, the headaches cleared up quite well. He believed many cases of migraine to be due to gastro-intestinal toxaemia, produced chiefly by excess of carbohydrate in the diet. Dr. Crewdson Thomas agreed that many sufferers from these toxic headaches did not take half enough liquid. Mr. Watkyn-Thomas drew attention to turgidity of the middle turbinate as a cause of headache, particularly in women. Dr. L. D. Bailey said that the headaches of high blood pressure could be relieved by the high-frequency current or diathermy, but it was necessary to be careful of the dose. In the fibrositis of the occipital aponeurosis he believed the pain to be due to constriction of the blood vessels supplying the scalp and the occipital bone, and that by ionization it was possible to relieve these cases. Mr. Frank Coke remarked that certain French workers had announced their discovery of definite cases where migraine had been traced to certain specific diets.

PRECANCEROUS CONDITIONS OF THE LARNYX.

A meeting of the Section of Laryngology of the Royal Society of Medicine was held on November 7th, when Dr. Chevalier Jackson opened a discussion on precancerous conditions of the larynx.

Dr. Chevalier Jackson said that this subject was of the utmost importance in the study of the problems of etiology, prophylaxis, and treatment of the "dire disease," as Sir Henry Butlin had called cancer of the larynx. The word "precancerous" was faulty; much time had been wasted in discussions by not beginning with a definition, so that the participants were not talking about one and the same thing. If the word was employed to indicate a stage always traversed in the transition from the normal to the neoplastic, it was doubtful whether there was sufficient evidence to justify its use. If the word was taken to imply only a soil favourable to the development of cancer, little fault could be found, and discussion would be useful. The condition of the tissues before the development of cancer might hypothetically be described as a preparation on the part of the cells to do something not already done. Metaphorically, it might be likened to a large number of the citizens across the border leaving their daily routine and mobilizing preparatory to invasion. Similar misbehaviour on the part of the cells that had not yet crossed the border was often visible near an area where invasion constituting cancer had already begun. Occasionally it was seen without any subsequent invasion. Any inflammatory or irritative condition in the larynx might be called precancerous, but such use of the term would be a very loose application indeed. The condition was, perhaps, very rarely recognizable as a histologically proven fact. To ask the histologist to state from the examination of dead removed cells what the adjacent, living, unremoved cells were going to do was asking much, yet occasionally this had been done on the basis of probabilities. An illustrative example had been published by Dr. Jackson in the *Proceedings* of the American Laryngological Association for 1922. Sir StClair Thomson, Mr. Herbert Tilley, the late Mr. Hunter Todd, and Dr. Jackson, from mirror examinations, had concluded that the condition in the larynx of a man aged 42 was suspicious. Histological examination by James Ewing demonstrated a cellular structure to which the term "precancerous" could conveniently be applied, inasmuch as the deeper cells were misbehaving, and showed a sudden transformation of the normal to the hyperplastic, with the appearance of typical epithelial pegs, but they had not yet invaded the submucosa. Dr. Ewing had added the comment, "This is the stage in which to treat cancer of the larynx, not after it gets well advanced." Laryngo-fissure, with moderately wide removal, completely cured the condition; the patient was now in good health, with a good voice, after fourteen years. In contrast with this case were those in which a chronic laryngitis was followed by a stealthily developing cancer after many years, as long as thirty in some of Dr. Jackson's cases. A precancerous stage might exist in such patients, but it was unrecognizable. The clinical indications for treatment were clear, though not always easy of accomplishment. Every curable disease of the larynx and upper air passages should be cured, and all incurable conditions should be ameliorated so far as possible. Avoidance of all forms of laryngeal irritation was imperative. Vocal rest and avoidance of alcohol and tobacco should be insisted upon. At the first sign of cancer a microscopical examination should be made; further treatment would be based upon the histological findings.

CHRONIC ABDOMINAL PAIN.

At a meeting of the Sheffield Medico-Chirurgical Society on November 5th, with the president, Professor Graham Simpson, in the chair, Dr. E. F. Skinner opened a discussion on chronic abdominal pain.

Dr. Skinner said that in discussing chronic abdominal pain it was essential to define the terms. First of all, were they to understand by "chronic" merely a long-continued pain, or might they include recurring pain? Secondly, did the term "abdominal" refer only to the viscera, or did it include the parietes? Thirdly, it must be remembered that what was pain to one patient was mere discomfort to another. Two generalizations must be considered when dealing with any question of pain. The first was that its intensity varied inversely as the nervous stability of the individual, not only because of the original nervous make-up, but also because of the lowering of the threshold for pain consciousness which ensued in long-continued illness. The second was that the significance of pain varied inversely as the richness of its description—the more flowery the language, the less credence was to be placed on its intensity. All were familiar with Bramwell's patient "plump as a partridge," who suffered terrible agonizing pains all over the body. During the previous two or three years Dr. Skinner had been struck with the fact that the patients who complained most of pain suffered from "functional" rather than structural organic disease; patients with definite structural changes made the least complaint. Some illustrative cases were described. His experience suggested that pain was an uncertain guide to diagnosis in many cases, and he commented on the number of "congested appendices" removed annually from an otherwise healthy abdominal cavity. There might not be many, but the speaker suspected that a considerable number of such operations were performed merely on the grounds of chronic abdominal pain. The only pain which was really of diagnostic aid was that type of referred pain which had definitely anatomical localization; such cases did not bulk largely in those covered by the title of the discussion. Apart from referred pains, chronic abdominal pain as a diagnostic aid was of doubtful value.

Mr. E. Finch said that in order to appreciate the extent of pain complained about it was necessary to know the "language" of the patient and the circumstances of its

origin. Clinically one had to regard pain and disease as synonymous, though the disease was by no means necessarily in the abdomen. From a clinical point of view pain could be regarded as due to tension. The spontaneous pain reported by a patient was as a rule vague and very ill defined. It might become more localized as the peritoneum became involved, but it was then usually accompanied by physical signs. At the present time, however, clinical experience generally had to interpret the cause of pain. Pain being a purely subjective symptom, there was a natural tendency to refer the patient at once to the radiologist or to the biochemist for further tests, and thus one of the most important methods of examination—namely, a careful clinical history—was apt to be neglected. Pain in the right iliac fossa in a patient over the age of 50 might be due to a growth of the colon when no other physical signs could be found. Mr. Finch thought that chronic appendicitis could occur in the adult without a previous acute attack, though this was not so in the child. He doubted very much whether calcareous glands were a cause of abdominal pain. He referred to the difficulty of assessing the value of adhesions as a cause of pain unless they produced obstructions; he was also doubtful whether visceroptosis *per se* would account for pain. The question of operation for chronic abdominal pain with no physical signs was a matter of weighing up evidence; in arriving at a decision the most valuable opinion was that of the family doctor.

Mr. W. W. King said that pain due to retroversion or prolapse was relieved by lying down; if caused by pelvic inflammation, endometrioma, or the malignant invasion of tissues, it was not much influenced by posture, and might even be worse at night. Recurrent pains were generally intestinal rather than uterine in origin. Retroversion—actual, partial, or imaginary—had been blamed for much pelvic pain which was not necessarily caused by it; a mobile retroversion did not give rise to pain in nulliparae or in women after the menopause. Retroversions in parous women were not always painful, and the pessary test was valuable in such cases; if the pain was relieved, and recurred after the removal of the instrument, an operation could be confidently advised. If the "pessary test" was not applicable to a particular case, operation might give relief, but it was uncertain. From records he found that he had operated upon six "untested" patients with retroversion who had complained of abdominal pain; four had been cured, while two were not relieved. A failure rate of one-third showed that a surgeon should be as careful in advising such operations as in forecasting their results. Endometrioma was one of the commonest and the least generally recognized causes of abdominal pain. The large masses were easily recognized, but a small nodule often caused great suffering. The pain was generally described as being more or less continuous and unrelieved by rest; it was liable to exacerbations, especially at the periods. The onset was often acute and accompanied by vomiting, and thus not infrequently simulated appendicitis or renal or gall-stone colic. The typical symptoms were abdominal pain, dysmenorrhoea, dyspareunia, and rectal pain. In some cases a tender retrocervical nodule or, very rarely, blue vaginal cysts could be found on vaginal examination. An almost diagnostic sign was thickening and intense tenderness of one or both utero-sacral ligaments. Mr. King had been treating these cases with diathermy, and an analysis of the follow-up showed that of thirteen patients so treated, ten reported themselves to be cured. The three failures represented either an incorrect diagnosis of the real cause of the pain or a recurrence of the growth.

Dr. Wilkie showed skiagrams, and gave the clinical history of cases of abdominal pain caused by lymphatic leukaemia, syphilis of the stomach, malignant growth of the lung, calcification of the pleura, and osteo-arthritis of the spine. Dr. A. G. Yates said that chronic abdominal pain might be caused by diseases outside the abdominal cavity. Persistent pain was sometimes due to panniculitis. The thick folds of subcutaneous fat felt indurated and might be mistaken for a more deep-seated lesion. It was a good rule always to examine the pupils and the reflexes in cases showing abdominal symptoms. The abdominal crises of tabes might simulate gastric, duodenal, or other lesions. Nerve-root irritation by tumour or spinal caries were other possible sources of error. The functional cases, and especially the cases of so-called visceroptosis, were perhaps the most difficult of all; they afforded good examples of Adler's organ inferiority. The poor abdominal development, narrow chest, and acute subcostal angle with displacement downwards of the abdominal viscera constituted a perfect nidus for the development of a psychoneurosis; the pain in these cases, though real, was psychological, and constituted a means of escape from some intolerable situation. Dr. Archibald Young spoke of the humiliation which the practitioner felt in ascribing the pain to some undetermined gastric disorder. It was often the line of least resistance to accept the patient's own diagnosis of a "gastric stomach." Exact diagnoses by means of *x* rays and fractional test meals were impracticable for all cases. Years of practice developed a clinical intuition which enabled one to select the right cases for complete investigation. He agreed with Dr. Wilkie that either tuberculous or grinders' phthisis could cause chronic abdominal pain. Early myocardial degeneration was frequently shown by abdominal pain. He believed that chronic constipation was a great cause of pain, which often simulated duodenal ulcer; such cases could be cured by paraffin medication. He gave instances of abdominal pain caused by rheumatoid arthritis of the spine. With reference to the toxic causes of chronic abdominal pain, lead poisoning had now been almost eliminated; but he had had a case of abdominal pain from the surreptitious drinking of laudanum. He did not think that a movable kidney existed frequently without general visceroptosis, and added that the greatest disservice which could be done to a patient was to tell her of her misplaced organ. Dr. Harrison had found that certain types of work were liable to cause abdominal pain. He told of cases in which pain had disappeared on ceasing to work a treadle sewing machine.

Dr. Mackinnon saw no reason why the analogy of the hysterical knee, where all symptoms often disappeared after an exploratory operation, should not apply to the abdomen. In such cases the appendix might be regarded as the surgeon's friend, and even the removal of a normal appendix might be held to justify operation. An abdominal operation for "unclear" cases often led to no improvement, and such patients frequently underwent repeated laparotomies. A striking feature in these cases was the willingness and even eagerness with which many patients submitted to further operation; that possibly might be regarded as some measure of the degree of their suffering. Where pain was the only symptom, unless there seemed to be a reasonable likelihood of finding something wrong in the abdomen he thought an operation should not be embarked upon lightly. In a child with a history of chronic abdominal pain nothing could be found to account for it, but an *x*-ray examination revealed the presence of calcareous glands. Dr. R. K. Robertson thought that constipation was often due to the patient's ill-advised attempts at self-treatment by purgatives. Bony changes in the spine which caused pressure on the nerves deserved more attention. Mr. Finch had justly stressed the importance of tension; probably fewer mistakes would be made in any case of pain if the question were asked whether there was anything causing tension in any of the viscera. Mr. Finch had also instanced pain in the caecal region due to stricture of the gut in the pelvic colon; Professor Wilkie had first called his attention to this nearly twenty years ago.

Dr. Cuthbert Barron remarked that patients with chronic abdominal pain might be classified as those who had a disorder of function and those who had an organic lesion. The cases could be subdivided into those who had had and those who had not had abdominal operations. Post-operative pain was frequently the expression of an "anxiety" or an "exhaustion" neurosis in relation to the operation. It was often the sensory nerves at the site of the operation which were disordered. Organic causes for post-operative pain were adhesions or ventral herniae. Dyspepsia was the chief cause of pain among those who

had not been operated upon. Both hypochlorhydria and hyperchlorhydria could cause chronic pain; the former was rare, but the lattter was very common. Before ulcer (gastric or duodenal) developed there was apparently a long history of this disorder of gastric function. Chronic abdominal pain was caused by constipation in neurotic subjects. When there was some organic lesion to account for the pain it might be in the abdominal wall. He drew attention to the difficulty in recognizing renal causes for chronic abdominal pain in the absence of other symptoms. The President summed up the discussion briefly. He suggested that since the causes of abdominal pain were so numerous, and occurred in such diverse regions, the surgeon should cultivate the long abdominal incision after availing himself of all the resources afforded by *x* rays and the laboratory.

CLINICAL AND HISTOLOGICAL CHARACTERS OF PARKINSONISM.

At a meeting of the Pathological Society of Manchester, Professor J. S. B. Stopford opened a discussion on Parkinsonism, by detailing the underlying anatomical features of the condition.

Professor Stopford first described the cortico-spinal pathway, and then the extra-pyramidal system which was the site of the more important pathological changes in the various diseases giving rise to the Parkinsonian syndrome. He gave an account of the basal ganglia, and in particular of the fibres arising in the cells of the globus pallidus, which passed down to the red nucleus and the substantia nigra. Some of these fibres from the red nucleus decussated and formed the rubro-spinal tract, while others from the substantia nigra seemed to decussate with the pyramidal fibres, and eventually to form connexions with lower motor neurones.

Dr. F. R. Ferguson referred to the original description of the "shaking palsy," by James Parkinson in 1817. The term "Parkinsonism" was comparatively recent, and referred, not to a disease, but to a syndrome caused by a lesion of the extra-pyramidal tracts, and consisting of three features: (1) rigidity, which occurred proximally rather than distally, affected the flexor muscles rather more than the extensors, and was cogwheel in type; (2) disturbance of movement characterized by easy fatigue, slow, irregular, and limited movements, inability to maintain contraction, poverty of movements, and loss of movements of co-operation; and (3) tremor. These three features affected different parts of the body, giving the typical picture of Parkinsonism, which Dr. Ferguson detailed; he concluded by describing the different types of the syndrome and their pathological causation; the commonest type now was the chronic encephalitic type. There were also the idiopathic (paralysis agitans), arteriosclerotic, syphilitic, neoplastic, senile, and a few rarer types.

Dr. Critchley described the pathology of the syndrome. In true paralysis agitans no part of the central or peripheral nervous system was immune, for changes occurred throughout the cerebrum, cerebellum, spinal cord, and even the neuro-muscular junctions. The diseased process was exaggerated in certain areas of the brain, notably in the basal ganglia (especially the globus pallidus) and the midbrain (in particular the substantia nigra). The changes were microscopic, consisting of a diminution of the ganglion cells which had an unhealthy appearance, a disintegration of myelin, and an overgrowth of glia. In the arteriosclerotic type there were obvious naked-eye changes, taking the form of lacunae of disintegration in the basal ganglia. Histologically, the changes were those met with in paralysis agitans, but in addition there was evidence of arteriosclerosis, and a condition of sponginess of the globus pallidus due to focal thrombosis and softening. In the chronic encephalitic type subacute inflammatory changes were found in the basal ganglia and mesencephalon. There was cuffing of the lymphocytes, and in the substantia nigra masses of pigment could be seen lying free. Dr. Critchley concluded by describing the pathological processes encountered in certain of the rarer types of Parkinsonism.

MOUTH INFECTION AND PUERPERAL SEPSIS.

At a meeting of the North of England Obstetrical and Gynaecological Society, held in Manchester on October 24th, with the president, Dr. J. W. Burns, in the chair, Dr. A. S. Garden (Southport), in a communication on mouth infection as a cause of puerperal sepsis, described a series of four cases which had occurred in the Southport Maternity Hospital of parturient women developing fever from uterine infection. The first was delivered normally on January 19th, and developed a temperature of 102.6° F. two days later. *Streptococcus pyogenes haemolyticus* was isolated from a cervical swab. The second patient was delivered by low forceps on January 24th, and two days later had a rise of temperature. The third patient on January 29th developed a rise of temperature on the second day, when the fourth case was confined, and her temperature rose on February 11th. The throats of the entire staff were then swabbed. One nurse was found to harbour haemolytic streptococci without symptoms. She was isolated from the wards; all members of the staff then wore masks during confinements and swabbings, and no further rises of temperature occurred.

Dr. Garden quoted the observations of Mr. W. W. King in an article of the *British Medical Journal* of March 26th, 1930, also Dr. Kinloch's report on "Maternal mortality in Aberdeen, 1918 to 1927, with special reference to puerperal sepsis," and said that in April, 1930, he personally supervised a normal delivery with a view to taking observations from this point of view. The acting midwife, who wore a mask, admonished and encouraged the patient with words in which there was a frequent use of sibilants and labial consonants. He concluded that aseptic and antiseptic precautions are better carried out in a maternity hospital than in the home, that the danger from "spray" in institutions is greater because of the elevated labour bed, and that with more assistance there is more talking and "spray." He stressed the point that dialect plays an important part. He recommended that in all cases effective masks should be worn.

Cases and Specimens.

Dr. Garden then described a case of cancer of the cervix complicating pregnancy. The patient was treated from the thirty-sixth week as a case of placenta praevia right through the labour, which was terminated by Caesarean section twenty-four hours after its commencement. She died of general peritonitis, and at necropsy the placenta was found to be at the fundus, but the cervix was invaded by a mass of carcinomatous material. He presented this case to show the difficulties which might arise in diagnosis, and to seek the advice of the society to avoid such an error in this class of case. The case was discussed by the President and Drs. Fletcher-Shaw, Malpas, Bride, Dougal, and King.

Dr. J. W. Bride (Manchester) showed an abnormally large fibroid, weighing 14 lb., which he had recently removed. The patient was aged 52, and her chief complaint was loss of weight and indigestion. She had noticed the swelling only for a few months. He then described a tumour of the abdominal scar following ovariotomy, to elucidate the conclusion that ovarian cysts should be removed entire through a large incision rather than by tapping. Five years ago he had removed two very large ovarian cysts and the uterus by supravaginal hysterectomy from a nulliparous woman, aged 38, in whom he had resorted to tapping first. These cysts were reported to be pseudomucinous cysts. When he saw the patient this year, she had a small swelling the size of a walnut in the right groin, with a larger one the size of an orange in the abdominal scar. The latter, when removed at operation, was found to infiltrate the recti muscles, but did not invade the peritoneum. The lump in the right groin was encapsulated and easily removed. Dr. Bride compared its growth to implantations of endometriomata in abdominal scars. The gross appearance of the tumour was one of myxoma. Dr. Dougal, in discussing the case, suggested that it was a pseudomucinous cyst becoming malignant.

Dr. C. P. Brentnall (Manchester) showed radiograms of general oedema of foetus, and imperfect development of foetal skull resulting in complete extension of head.

Reviews.

ASPECTS OF MODERN BIOLOGY.

Der nordische Mensch. Von Halfdan Bryn. Munich: J. F. Lehmann. (Med. 8vo, pp. 166: 126 figures, 10 maps. M.9.)

Man and Animals in the New Hebrides. By John R. Baker, D.Phil.Oxon. London: G. Routledge and Sons, Ltd. (Demy 8vo, pp. xiv + 200; 43 figures. 12s. 6d. net.)

Medizinische Anthropologie. Von Oswald Schwarz, Privatdozent an der Universität Wien. Leipzig: S. Hirzel. (6 × 8¾, pp. xx + 383. M.13.)

Biological Principles. By J. H. Woodger, B.Sc. International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trench, Trubner and Co., Ltd. (Demy 8vo, pp. xii + 498. 21s. net.)

The four works noted here serve to illustrate how varied the field of modern biology has become.

The first is devoted to a study of the people of Norway—their physical characterization, their racial nature, and their origin. It is written by Mr. Halfdan Bryn, a magistrate of Trondhjem, who for many years has devoted his spare time to a systematic and exact investigation of the people of his district, and has earned for himself a high place among those European anthropologists who approach the study of human races from a biological point of view. His object in writing the present work is to place before the world a true picture of the Nordic race as seen in the country where it reaches its purest development—Norway. The second work, written by Dr. J. R. Baker, demonstrator in the Department of Comparative Anatomy in the University of Oxford, provides us with an account of the fauna of an isolated group of islands in the Pacific—the New Hebrides. Dr. Baker is a biologist with a catholicity of interests; during his two visits to the New Hebrides he was able not only to extend our knowledge of their corals, their mosquitos, and their bats, but also of their native inhabitants, and of the pigs bred by them. His observations made on the inhabitants should be studied by our statesmen. His dissections of pigs throw light on a problem which has a direct interest for medical men—the imperfect differentiation of sex. In certain herds or breeds of pigs in the New Hebrides over 10 per cent. of the young are born neuters—imperfect males. In the third work noted here, Dr. O. Schwarz of the University of Vienna applies to the elucidation of human diseases and disorders biological concepts which have been formulated by modern philosophers and psychologists. For him medicine is a department—an empirical department—of biology. The fourth work on our list, like the previous one, is philosophical in nature. It is written by Mr. J. H. Woodger, lecturer on biology, Middlesex Hospital Medical School, who in the first page reproduces quotations from Locke's *Essay Concerning Human Understanding*, J. S. Mill's *Logic*, and Professor A. N. Whitehead's *Science and the Modern World*, and thus prepares us for the contents of his book, *Biological Principles*. Hitherto biologists have been content to observe and record facts, and to give explanation of these facts. Mr. Woodger is convinced that they must take a third step if biology is to be reckoned a science in the same sense as physics; they must make certain that their methods of observation and of thinking will pass the criticisms of modern masters of logic and metaphysics. Mr. Woodger's treatise is a criticism of the dicta accepted as truths in modern biology. It is to be feared that if Mr. Bryn, Dr. Baker, or even Dr. Schwarz, had read and accepted the teaching of Mr. Woodger they would have hesitated before writing books which, if profitable for those in search of knowledge, are probably very defective from a metaphysical point of view.

In their respective ways all the works just mentioned represent additions to our knowledge of biological processes. Norway offers ideal conditions for natural experiments in the evolution of human breeds or type. The inhabitants of each narrow long inland valley are semi-isolated inbreeding communities. It is in these inland valleys that Mr. Bryn finds the most distinctly differentiated Nordic types—types marked by the tallness of their stature, the whiteness of their skins, the blondness of hair, blueness of eyes, projection of occiput, and narrowness of face. In some valleys almost every member of the community is so marked. Along the western coast, however, there are numerous communities in which the Nordic characters disappear and are replaced by hair, eyes, and skin showing grades of pigmentation, heads tending to roundness, stature to squatness, and faces to width rather than to length. Mr. Bryn seeks for an explanation of the presence and distribution of these two contrasted types of Norwegians in the events of prehistory. He regards the blond inhabitants as the first to settle in Scandinavia, and looks upon them as the descendants of people who lived in Europe during the latter phases of the Ice Age. The darker, round-headed people of the coast are later settlers coming from the south and reaching Norway by sea. The same dark, round-headed racial element occurs in Wales. The narrow Nordic face prevails in Britain as well as in Norway.

The black-skinned, woolly-headed New Hebrideans are the antipodeans of the blond people of Norway, and yet, if we are to believe Maddison Grant and his school, these opposite types of humanity present a common problem. It is said that the Nordic type is perishing in Europe and America; there can be no doubt that in the New Hebrides the Melanesian type is passing rapidly towards extinction. During his two visits to the islands Dr. Baker applied himself to the "native problem"—Why are the local communities dying out? He gives a list of circumstances—twenty-five in number—which are supposed to be concerned in the extinction of native races. He admits as valid the introduction of diseases to which natives are highly susceptible, and to which white men are more or less immune, and the practice of abortion. Symptomatic of racial decay is the predominance of males over females in the general population; in native communities Dr. Baker found that there were 159 males for every 100 females. A hundred mothers had only 128 children among them. Whether the women wished to bear children but could not, or whether they could and would not, has still to be determined. If the people are to be saved, Dr. Baker is of opinion that it will be necessary to withdraw all foreign settlers, isolate the islands, and permit the natives to work out their destiny in seclusion and in their own way. Whether such a policy, if practised in all regions of the world, is best for the ultimate good of humanity is a matter which is seriously open to question. Hitherto all communities have been exposed to the trying winds of competition.

It is very possible that readers may be attracted to Dr. Schwarz's book by its attractive title—Medical Anthropology. If they expect to find in his pages the fruits of modern anthropology applied to the elucidation of human disorders and diseases they will be disappointed. Dr. Schwarz looks upon anthropology as another name for the biology of mankind. Some day it may become so, and when it does it will represent the foundation for a science of medicine. Meantime, Dr. Schwarz is mainly concerned with definition—the definition of "type," of "class," of "health," of "sickness," of what "medicine" is and what it is not. His conclusion is that the cure of most modern evils is to be found in psychotherapy.

Mr. Woodger's *Biological Principles*, like that of Dr. Schwarz, is a work of great erudition, and is primarily intended for the instruction of expert biologists. Mr. Woodger, in applying the latest concepts of space and time, of the epistemologist, methodologist, and metaphysician, to an examination of the foundations of modern biology, proves himself to be a destructive rather than a constructive philosopher. Of modern physiologists he writes: "Biological problems always present themselves to physiologists with a childish simplicity which is almost touching." Nor do zoologists fare any better at his hands. He asserts that "Professor Goodrich's account of variation seems to be very muddled," and yet to the ordinary reader the account cited seems as clear an expression as the English language permits. He is even more severe on students of the human brain, and gives "a few illustrations of the horrible confusions into which neurologists are led by mixing psychology (or what they suppose to

be psychology) with their neurology." Indeed, Mr. Woodger regards those functions of the living brain we speak of as "mental" as being outside the scope of biological inquiry, and capable of elucidation only by metaphysical methods of inquiry. The fact remains that such advances as have been made in our understanding of man's mental reactions are the result of the application of biological methods.

We see in these four works on biology a hope for the future. They indicate a tendency, as biology expands, to synthesize as well as to specialize. It is well, too, that biologists should be conscious of their assumptions as well as precise about their facts.

A. K.

DIAGNOSIS OF DISEASES OF THE CHEST.

THAT a fourth edition of NORRIS and LANDIS'S *Diseases of the Chest*[1] has been found to be necessary shows that the book has met a demand among clinicians, for whom it is particularly designed. It details at some length the physical diagnosis of the heart and lungs in health and disease, special emphasis being laid on the pathological condition underlying each physical sign, but no attempt is made to describe treatment or discuss prognosis. The present edition has been revised and new material added. The book is divided into four parts. The first two concern the examination of the lungs and circulatory system respectively, and comprise one-third of the volume. More than is the custom has been written on the subject of diagnostic acoustics, for the authors believe that only through comprehension of the laws of sound production and transmission can the results of percussion and auscultation be intelligently interpreted. The last two sections describe the diseases affecting the two systems, giving a number of important references. Each disease is described in detail, and many rarities are included. Indeed, the authors believe that little of practical value has been omitted, but there does not appear to be a reference to pulmonary asbestosis, a condition which has recently attracted much attention in this country. They lay stress on the advantages of using the bronchoscope in the diagnosis of pulmonary disease, not only as a means of seeing the condition of the larger bronchi, but also for removing from the smaller bronchi uncontaminated specimens of secretion for bacteriological study. The section dealing with the pericardium, heart, and aorta is the best part of the book, in particular the descriptions and illustrations of pericardial disease being noteworthy. There is a good chapter by Dr. Krumbhaar on the electrocardiograph. The authors endeavour to teach as much as possible by means of illustrations, and have included nearly five hundred in the volume. Of these, many are from photographs of frozen sections from the cadaver, previously hardened in formalin, so that the anatomical relations remain as during life. Such specimens have been found invaluable for teaching, and their inclusion is the novel feature of the volume. They are not, however, always used to the best advantage, and this applies also to certain of the radiograms. Some show the thoracic viscera viewed from the front, while others show the heart apparently on the right side of the chest as though the specimen was being observed from behind, and it is at times difficult to decide at first glance which is the left and which is the right side. There is, moreover, a tendency to overdo the inclusion of these illustrations, and in some cases photographs of fresh material would have been more suitable. But taking them all round the illustrations are very good.

The volume contains much that is excellent, and yet despite this it is somewhat disappointing, for the descriptions are long and are not always clear. Yet it is a book that has claims upon the clinician's attention. He will find much of interest in its pages regarding the examination of patients, and many of the pictures of frozen sections are striking, and are ideal for teaching purposes.

[1] *Diseases of the Chest and the Principles of Physical Diagnosis.* By George William Norris, M.D., and Henry R. M. Landis, M.D., Sc.D. Fourth edition, revised. Philadelphia and London: W. B. Saunders Company. 1929. (Roy. 8vo, pp. 954; 475 figures. 45s. net.)

TREATMENT OF SKIN DISEASES.

A TEACHER of dermatology is often told by old students how much they regret the lost opportunities of learning more about skin diseases when at hospital. In *Modern Skin Therapy*[2] Dr. HALDIN-DAVIS has done much to remedy the defect, for in his small book—it has no more than 128 pages—he has succeeded in assembling the principles and technique of treatment of those skin diseases which are usually met with in general practice, and which so often prove troublesome both to the practitioner and to the patient. There is no confusion of thought here; the author knows how to use his wide experience for the benefit of others. The directions for treatment are clear and succinct, and cover a wide range, including the recent developments in actinotherapy and protein shock methods. They are, further, essentially of a practical nature, and, with the exception of radium and x rays, require nothing that is outside the scope and usage of general practice. Some writers balk their readers by their dullness. Not so Dr. Haldin-Davis, whose pleasant style entertains the reader while he seeks instruction. There was a very real need of a book of this kind, and the author has hit off exactly what is required. The result is an admirable little book which cannot be too highly commended.

EPIDEMIOLOGICAL ESSAYS.

AMONG the acute experiences of medical practice in comparatively recent years the recurring epidemics of influenza and the appearance of encephalitis lethargica must be allowed as noteworthy events. The latter, after various hurried interpretations, became widely accepted as a "new disease," while at the same time wider experiences showed that not all its forms were attended by lethargy, and that for this and other reasons epidemic encephalitis was a more suitable title. In his collected *Epidemiological Essays*[3] Dr. F. G. CROOKSHANK is largely concerned with the claim that, so far from being an isolated and individual clinical picture, epidemic encephalitis is merely one of the forms in which influenza manifests itself; and, further, that in the same series are to be included epidemic poliomyelitis, encephalomyelitis, and various outbreaks of acute disease recorded in the earlier centuries under such names as sweating sickness, trousse-galant, pestilential fever, acrodynia, and perhaps some groups labelled ergotism or botulism. The accurate view, it is urged, is the view which recognizes an essential unity between the non-nervous manifestations of influenza and the nervous prevalences which may be, and frequently are, associated with these or substituted for them. In other words, influenza is responsible not only for epidemics of catarrhal disturbance, but also for epidemics of nervous disturbance.

A further proposition of interest relates to the circumstances in which outbreaks of influenza occur. The periodicity of these outbreaks has attracted much attention, and the late Dr. Brownlee calculated on the basis of the mortality returns a thirty-three-week periodicity, subject to a certain limited exception. With this conclusion Dr. Crookshank does not agree. After a study of the records of some five hundred years, he concludes that influenza shows a tendency to occur about the time of the equinoxes, that there is an epidemic outbreak every ten or eleven years, and that three times in the course of a century or so the disease assumes a particularly conspicuous activity. Moreover, the interest of these conclusions is heightened by the suggestion that there is a correlation between epidemics of influenza on the one hand and general magnetism on the other, and that in this fashion modern observations on cosmic and telluric phenomena are in harmony with the Hippocratic aphorism that "with the seasons, men's diseases, like their digestive organs, suffer a change."

If to some readers all this seems somewhat fanciful, Dr. Crookshank may fairly ask for an examination of

[2] *Modern Skin Therapy.* By H. D. Haldin-Davis, M.D., F.R.C.S., M.R.C.P. Modern Treatment Series. London: J. Cape, Ltd. 1930. (5 × 7¾, pp. 128. 5s. net.)

[3] *Epidemiological Essays.* By F. G. Crookshank, M.D., F.R.C.P. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1930. (5¾ × 8¼, pp. ix + 136. 7s. 6d. net.)

the evidence. In collecting this he has displayed great industry and critical acumen; and he presents his case in forcible fashion and with a combative zeal that adds brightness as well as vigour to the argument. From the individual text, too, he passes to certain issues which apply widely in the field of medical philosophy, and for our own part we think he preaches much sound doctrine. Some of his essays are in lighter vein, but they are none the less excellent reading. Like the rest of us, Dr. Crookshank has his antipathies, and the "reviewer in medicine" is one of them. Doubtless this is an exhibition of what Charles Lamb called "imperfect sympathies," and with it, therefore, we will find no cause of quarrel.

AFTER CONSULTING HOURS.

In the preface to his little book entitled *After Consulting Hours*,[4] the author, Dr. Christopher Howard, says that it consists of "a series of more or less disconnected reflections." He is modest enough to disclaim any particular value for them, but hopes they may cause thought in others, and "play their humble part in the achievement of the truth." This is probably their chief value as well as their ostensible aim, and they may be commended to Dr. Howard's medical brethren as containing a good many wise thoughts and a considerable number of useful suggestions, both about methods of practice in general and as regards the details of treatment in particular cases. Moreover, the book is written in excellent English, and is eminently readable. The reflections are sorted into chapters under the headings "medical," "general," "sexual," "therapeutic," "appendicular," "circumcisional," "mixed," and "terminal," but in quite a large number of cases there is no very good reason for placing some pages in one chapter rather than in another. The author, of course, has his idiosyncrasies and peculiar preferences: this is part of the charm. He has studied a good deal in France, evidently, and so is able to introduce and to commend a number of methods and preparations which are not so well known in this country as they might be. He makes large use of the intravenous or intramuscular methods of administration, and has some sensible words to say about endocrines. Probably he has more faith in the therapeutic virtues of carefully chosen alcoholic drinks than is nowadays common, and he exhibits a strong prejudice against the drinking of coffee after lunch or dinner. He reveals, too, how he thinks he might be tempted to consider suicide while in Cheshire, though it would never occur to him in Suffolk. Altogether this is a pleasant little book revealing an attractive personality, and containing a sufficient number of helpful and commonsense observations to make its reading worth while.

NOTES ON BOOKS.

Many radiologists, especially those engaged in *x*-ray therapy, will welcome a translation into English of the second edition of *Dosage Tables for Röntgen Therapy*,[5] by Professor Friedrich Voltz. To the first German edition, which appeared eight years ago, and was reviewed in our columns on February 11th, 1922, many alterations and additions have been made, and the book has been brought quite up to date. After a short introduction the author deals with the question of the spreading, the absorption, and the scattering of *x* rays. He then discusses seven cardinal points in this form of therapy—namely, the physical dose, the biological dose, the dosage quotient, the percentage deep dose, the effective dose, the practical dose, and the absolute unit of dosage. Following these two chapters a third takes into consideration the three methods of measurement—namely, the iontometric and photographic methods and measurement with the selenium cell. All these chapters are illustrated. The dosage tables, some sixty-five in number, follow in three groups, with a few explanatory notes, and the concluding chapter is given up to a consideration of the calibration of *x*-ray apparatus and *x*-ray tubes. As the author says in his short preface, this is not a "prescription" book; it is directed entirely towards the estimation of physical quantities, and its object is to assist the practical radiologist to estimate dosage without the necessity for long measurements and repeated calculations.

A revised and enlarged edition of the *Catalogue of British Scientific and Technical Books*[6] has been issued by the British Science Guild, containing almost 14,000 titles—more than double the number in the original volume published in 1921. As the catalogue is limited to books published by British firms, and appearing in their lists up to September, 1929, it may be regarded as an up-to-date guide to British scientific literature so far as textbooks and books of reference in the fields of science and technology are concerned. About 600 entries appear in the section of medicine, excluding those under surgery, gynaecology, and dentistry. A detailed description is given of every volume, including the name of author or editor, the title, size, number of pages, date of last edition, publisher, and price. In this third edition the general plan of its predecessors has been followed, but a slight rearrangement has been made to provide a more convenient grouping of subjects and the subdivision of a number of headings. The catalogue is completed by name and subject indices, and can be thoroughly recommended for its practical use both to the specialist and to the general inquirer.

Mr. de Vere Stacpoole combines the skill of the accomplished story-teller with the grace of the scholar in blending the colour, the fragrance, the bizarre types, and the sinister violences of the islands of the Seven Seas. Most of his *Tales of Mynheer Amayat*,[7] head of the Tavas Agency of Sandabar and Salong, have their setting in the Dutch East Indies. All of them have a genuine "thrill": several spring ingenious surprises; but what distinguishes them from the ordinary run of detective stories, apart from the lucid and liquid style, is the fact that the *clou* is usually some abnormal condition or peculiar trait—somnambulism, forms of suggestion, a facial resemblance, colour-blindness. The narrative glows with beautiful objects—pearls, sapphires, rose jade carvings—and is full of acute and vivid observation. "Dead Girl Finotte" is macabre in an original way, and "The Amazing Story of Wang" is a fine piece of ironic comprehension. This is an entertaining book, its author (as becomes a member of the medical profession) wearing much knowledge very lightly.

The Child's Conception of Physical Causality[8] is a translation into English of an important series of careful investigations on children carried out by Professpr Jean Piaget of the University of Geneva. Three previous studies by the same writer have already been made accessible to English-speaking readers, and are included in the International Library of Psychology, Philosophy, and Scientific Method. In the concluding section of the present work the writer summarizes the conclusions reached in this work and in his last book, *The Child's Conception of the World*.

The biography entitled *The Beloved Physician: Sir James Mackenzie*,[9] by Dr. R. McNair Wilson, was reviewed in the *British Medical Journal* of October 30th, 1926 (p. 791), when it was recommended, especially to the young practitioner, for its skilful exposition of Mackenzie's life work. A well-printed cheaper edition has now been published containing a portrait.

The second volume of the *Collected Papers*[10] of the Rowett Research Institute, Aberdeen, gives some account of the developments that have occurred at the Institute since the issue of the first volume in 1925. The experimental stock farm, which comprises nearly 1,000 acres, is expected to be completely established in the course of the present year. In 1929 the Imperial Bureau of Animal Nutrition was instituted as a clearing-house for information on nutrition and allied subjects for the benefit of research workers throughout the Empire. Owing to the increasing number of post-graduate students, and visitors from overseas, the governors have decided to build a residence for temporary workers in the vicinity of the Institute. During the last four years members of its staff have been sent to Palestine, New Zealand, and East Africa to co-operate with agricultural or medical departments. The present collection of papers has been added to the Library of the British Medical Association.

[4] *After Consulting Hours.* By Christopher Howard, M.R.C.S.Eng., L.R.C.P.Lond. London: W. Heinemann (Medical Books) Ltd. 1930. (Cr. 8vo, pp. vii + 204. 7s. 6d. net.)

[5] *Dosage Tables for Röntgen Therapy.* By Professor Friedrich Voltz. Translated from the second German edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1930. (Post 8vo, pp. 120; 21 figures. 7s. 6d. net.)

[6] *A Catalogue of British Scientific and Technical Books.* Compiled by Daphne Shaw. Third edition. London: A. and F. Denny, Ltd. 1930. (Demy 8vo, pp. xxi + 754. 20s. net.)

[7] *The Tales of Mynheer Amayat.* By H. de Vere Stacpoole. London: G. Newnes, Ltd. 1930. (Cr. 8vo, pp. 256. 7s. 6d. net.)

[8] *The Child's Conception of Physical Causality.* By Jean Piaget. International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trench, Trubner, and Co., Ltd.; New York: Harcourt Brace and Co., Ltd. 1930. (Demy 8vo, pp. viii + 309. 12s. 6d. net.)

[9] *The Beloved Physician: Sir James Mackenzie.* By R. McNair Wilson. Cheaper edition. London: J. Murray. 1930. (Demy 8vo, pp. x + 316; 1 portrait. 7s. 6d. net.)

[10] *Collected Papers*, vol. ii. The Rowett Research Institute. Edited by John Boyd Orr, D.S.O., M.C., M.D., D.Sc. Aberdeen: Edmond and Spark. 1930. (6 × 9½, pp. xv + 588; illustrated. 21s.)

VITAL STATISTICS FOR ENGLAND AND WALES.

THE REGISTRAR-GENERAL'S REVIEW.

In a recent memorandum, already referred to in these columns, the Chief Medical Officer of the Ministry of Health emphasized the value of the information contained in the annual statistical review of the Registrar-General for England and Wales, and directed the attention of medical officers to the reduced price at which sections of this publication will be available in future. The cost of the "Tables: Part I—Medical," is 7s. 6d., and that of the text 2s. 6d.

Mortality during 1928.

The first part of the review for 1928[1] is concerned with the deaths registered in England and Wales during that year, of which 235,542 occurred among males and 224,847 among females. The total of 460,389 corresponded to a crude rate of 11.7 per 1,000 of the estimated population, or, standardized to correct for the deviation of age and sex distribution, to 9.9—the lowest recorded in this country. Excluding the figures for 1921, 1923, and 1926, the number of deaths in 1928 was the lowest returned since 1862, when the death rate was more than twice as high.

It is noteworthy, however, that while the rate at all ages and for each sex was the lowest recorded, the mortality among males from all causes was higher than that of females by 25 per cent.—exceeding for the first time the percentage recorded in 1916–20. Among the chief causes of the higher male death rate were various types of cancer, accident (violence other than suicide and homicide), pneumonia, and arterio-sclerosis. The proportionate excess from tuberculosis was the same as that from all causes. Some forms of mortality other than those associated with maternity were largely restricted to one sex—for example, general paralysis of the insane, peptic ulcer, and genito-urinary disease other than nephritis, as well as suicide and accident, being mainly confined to males, and cancer of the sex organs and diseases of the thyroid to females.

Infant Mortality.

The rate of infant mortality in 1928 was 65 per 1,000 live births, which was exactly half of that of seventeen years earlier. Of the total number of deaths registered during the year, 9.3 per cent. were those of infants under the age of 1 year—a diminishing proportion in late years owing chiefly to the falling birth rate. For the second and third months jointly the 1928 rate was the same as that of the previous year, but at all other ages the rates recorded were the lowest attained in this country.

In each year from 1911 onwards the highest rate has occurred in the North county boroughs and the lowest—except in 1923—in the rural districts of the South. An unusual feature was that the London rate exceeded the general average by 4 per cent. This is attributed to the high mortality among infants aged 3 months and over, arising mainly from measles and respiratory disease. On the other hand, the continued low mortality in London of infants during the first four weeks of life—for the fourth successive year over 20 per cent. below that for the country at large—suggests that if the maternity conditions existing in London could be extended to the rest of the country, this "neo-natal" mortality, which has fallen since 1911-15 by only 20 per cent. in England and Wales, might be reduced at once to the London level.

Illegitimate infants die immediately after birth at a much higher rate than legitimate, and the excess is evidently many times greater from violence and neglect than from any other cause. Thus, the figures for 1928 indicate that the mortality among the illegitimate caused by violence and lack of care was over ninety times as high during the first thirty minutes of life as that of legitimate infants, whereas for all other causes it was only about three times as high. Further, in 1928 the mortality among the illegitimate of both sexes on the first day of life appeared to be rapidly increasing, coincident with a slight but steady decline in the mortality rate for the legitimate.

Compared with the preceding five years, the infant mortality in 1928 from all causes was less by 10 per cent. Marked declines are noted in the mortality rates from bronchitis and pneumonia, attributable to progress in infant hygiene and favourable weather conditions. The rate for the two diseases jointly—namely, 13.17—was unprecedented. Fewer deaths also occurred from congenital debility and convulsions.

Infectious Diseases.

An extensive outbreak of enteric fever took place in London during July and August of 1928. Although the total number of cases recorded in London during the year—595—represented an increase of 85 per cent. over the number of the previous year, the average mortality figure was not exceeded. Notably low mortality rates from this disease were also general throughout the South of England; on the whole, the rate for the South was much lower than that of the Midlands or the North. From a survey of recent years the distribution appears to be definitely changing from urban to rural areas. The opposite tendency is recorded in the mortality rate from measles, which continued to be associated with city life. Deaths from this cause numbered 4,302, corresponding to a mortality of 109 per million of population. Small-pox was prevalent in certain coal-mining counties, and although the type was comparatively mild, the number of deaths exceeded that of any other year since 1905.

The fatality rate for scarlet fever was about the same as that of the previous year, the mortality being less than 2 per cent. of that recorded sixty years earlier. Whooping-cough among children yielded a death rate lower by one-third than the rate at the beginning of the century. Statistics for diphtheria and croup at ages under 15 indicate that the mortality rate was higher than in any of the five preceding years but lower than in any year before 1923.

The number of deaths assigned to influenza was 7,754—4,084 of males and 3,670 of females—representing the lowest mortality rates since 1914. For the fifth year in succession the lowest death rate was recorded in London—illustrating a definite gradation of mortality, at a maximum in rural districts and a minimum in large towns. It is suggested that the term "influenza" may be more widely interpreted in rural than urban practice. Of the deaths in 1928, 45 per cent. were associated with pneumonic and 19 per cent. with other pulmonary complications. Notifications of encephalitis lethargica were the fewest since 1923, and the mortality the lowest since that date. Fewer cases, proportionately, were diagnosed in London than elsewhere, and the ratio of deaths to notified cases was smaller than in any other section of the population.

The standardized death rate for tuberculosis fell from 952 per million in 1927 to 909, the death rate for both sexes being the lowest recorded. Females aged 15 to 25 formed the only part of the population in which tuberculosis mortality had not materially declined. The number of deaths ascribed to syphilis—namely, 1,532—was the largest since 1921, though the increase can be partly explained by the introduction of the new form of medical certificate in the middle of the previous year. The mortality in early childhood from this disease continued to fall at a diminishing rate.

Cancer.

Deaths ascribed to cancer during 1928 totalled 56,253—26,013 of males and 30,240 of females. For both sexes these figures were the highest returned. The number of deaths from carcinoma was the largest, and that from undefined cancer the smallest, since the record of this distinction was made in 1901. Proportionately, the mortality from sarcoma, compared with the rate for carcinoma, has been decreasing, the ratio of 49 per 1,000 total causes in 1928 being the lowest on record. The standardized death rate for males amounted to 1,032 per million and that for females to 1,000. Both these rates were higher than for any previous year. While the mortality was higher among males for the preceding five years, the number of deaths and the crude death rate remained appreciably higher for females owing to the greater average age of the female population. The features of distribution by sex and age were much the same in 1928 as in the previous year, but the London rate for the first time was lower than that for the county boroughs.

[1] *The Registrar-General's Statistical Review of England and Wales for the Year 1928.* (New Annual Series, No. 8.) H.M. Stationery Office. 1930. 5s. net.

Diabetes: Pernicious Anaemia.

Mortality rates for diabetes—91 for males and 101 for females—were higher than in the previous year. The rate for males was the highest since 1922 (101) and that for females since 1915 (104). Since the introduction of insulin the mortality among males under the age of 55 had been reduced up to 1928 by 37 per cent., and that of females by 21 per cent. At 25 to 45 years the rate for males had fallen by 45 per cent. The effect of this large reduction, however, was masked in the total death rate by the concurrent increase of mortality at ages over 55. No indication is given by the death returns that insulin had had any effect in reducing the mortality in later life. It would seem that as phthisis mortality decreases that from diabetes increases, the latter being apparently a disease of prosperity and the former of adversity.

Satisfactory improvement is recorded in the mortality rates from pernicious anaemia, presumably as the result of the new liver treatment introduced in the later part of 1927. The standardized rates for males fell from 44–50 in 1921–27 to 30 in 1928, and that for females from 54–61 to 39. The number of deaths from pernicious anaemia, however, was proportionately higher than from all causes jointly at the ages of 45 to 75 in each sex; from the ages of 55 to 65 the excess was 110 per cent. for females and 72 for males. Owing mainly to more frequent certification of degenerative conditions the mortality from heart disease was higher than in the previous year. Standardized death rates for diseases of the respiratory system were the lowest on recent record at all ages and for both sexes.

Deaths ascribed to pregnancy or childbirth numbered 2,920, corresponding to a rate of 4.42 per 1,000 live births. Including associated mortality the proportion was 5.62. As in the preceding year a notable feature was the low mortality in London from septic and other causes. The rate for Wales during 1919–28 was uniformly above the average for England and Wales to an extent varying from 19 to 43 per cent.

The 656 deaths under or connected with the administration of anaesthetics exceeded the number for 1927 by 60, and was more than double that of any year prior to 1916. Of the total, 102 were associated with cancer and 38 with hernia.

POPULATION.

At June 30th, 1928, the total population of England and Wales was estimated to be 18,896,000 males and 20,586,000 females. The population was assumed to have grown by 4.2 per cent. over the period since 1921, representing an arithmetical average increase of 0.60 per cent. per annum, compared with 0.49 per cent. per annum during the decade 1911–21. The sex inequality, expressed as 1,096 females per 1,000 males in 1921, was reduced to 1,089 females per 1,000 males in 1928. According to the estimated age distribution the average ages of the mid-1928 population was 31.1 and 32.7 for males and females respectively, compared with averages of 29.9 and 31.2 at the last census. The live births registered in 1928 numbered 660,267, corresponding to a birth rate of 16.7 per 1,000 of population. This slight increase is regarded as a reaction from the more than usually depressed rate of last year and of no permanent significance. The proportion of male to female births was 1,044, 1,041, and 1,044 to 1,000 for legitimate, illegitimate, and total births respectively. Live births exceeded deaths by 199,878, compared with 169,563 in 1927; this rise in the natural increase figure is attributed mainly to the fall in the death rate during a period in which the regular fall in the birth rate was temporarily interrupted. The birth rate in this country attained its highest values during 1865–1880, when it exceeded 35 per 1,000 population; from that time it diminished by gradual and almost continuous stages to 23.8 in 1914. The rate of natural increase—4.3 per 1,000 of population in 1927 and 5.0 in 1928—was lower than that of any earlier recorded periods with the exception of the war years. It may be inferred from a study of the series that even if the fall in the birth rate continues, the number of births will exceed the number of deaths for some years, and that apart from the results of migration, the population will go on increasing, though at a somewhat slower pace. Mere excess of births over deaths, however, does not imply that the perpetuation of current conditions of fertility and mortality would be sufficient to ensure a continuous increase in the national population both now and in the remote future.

MOTOR DRIVERS AND VISION.

BY

N. BISHOP HARMAN, M.A., M.B., F.R.C.S.

On November 13th Mr. Herbert Morrison, Minister of Transport, announced that it is proposed to bring Part I of the Road Traffic Act, with the exception of certain small sections, into force on December 1st. The Regulations to be put into force on this date that will most concern the private owner are those affecting the issue of licences to drive. The new form of application for a driving licence contains a declaration as to the physical fitness of the applicant.* Three specific questions have to be answered. The second of these reads:

> Are you able to read at a distance of 25 yards, in good daylight (with glasses, if worn), a motor car number plate containing six letters and figures?

An applicant who replies "No" to this question is debarred from obtaining a licence.

It is evident that the prospective driver may take advantage of the best of the conditions offered. He will choose a clean, clear number plate, and preferably one with the letters painted white on a black ground, and not one with polished metal letters and figures which give disturbing reflections. He will choose good daylight, and neither the glare of sunshine nor the dimness of the dusk. He will use glasses if they help him. If he can read these letters at the required distance, and fulfils the other conditions, he may drive. Since nothing is said about "eyes" there is no ban upon the one-eyed man.

The letters and figures of a motor car number plate are prescribed in the Statutory Rules and Orders, 1930, No. 277, Fourth Schedule, paragraph No. 4:

> All letters and figures must be three and a half inches high, every part of every letter must be five-eighths of an inch broad, and the total width of the space taken by every letter or figure, except in the case of the figure 1, must be two and a half inches.

The prescribed size is practically that of the usual top letter of a Snellen's test card marked D.60. It is the letter which the person with "normal" vision will read at 60 metres. Since the candidate for a driving licence is only required to read at the distance of 25 yards, the letters which the "normal" sighted read at 60 metres, or 65.616 yards (taking the metre as 39.37 inches), the requirement of the Regulations cannot be held to err on the side of severity.

Vision satisfactory for driving safely is compounded of many factors. So far as acuity is concerned, it implies the ability of the driver to recognize objects in the street, and to recognize their detail distinctly enough to be able to judge signs of movement. One of the best comments on the necessity for good visual acuity I have heard was put thus: A distinguished public servant said, "When I drive I am not content to be able to see a child on the roadside; I wish to be able to see the position of the child's limbs and the expression of his face, so that I may judge of his probable movements, and drive accordingly."

Prospective drivers who find they cannot see the letters at the required distance will probably apply to ophthalmic surgeons for advice. It is with the examination of the sight of such applicants in the consulting room that I propose to deal. We shall need to make out subjective tests upon Snellen's test cards. It would be inconvenient to make them in the open street.

Tests of Visual Acuity.

Ophthalmologists are in the habit of recording the visual acuity of a person examined in the form of a vulgar fraction—a convenient but misleading practice. A person reading the letters of a number plate of a car at 60 metres would be recorded as having 60/60 vision, for he reads the 60 metre line at 60 metres. This is equivalent to our common standard of 6/6, when the vision is taken at the convenient consulting-room distance of 6 metres. Recording the visual requirement of the Regulations in the same form, the ability to read at 25 yards the letters which those with normal visual acuity can read at 65.616 yards would be 25/65.6. If these figures of distances in yards be

* See *British Medical Journal*, November 22nd, 1930, p. 884.

converted into metres according to Snellen's scale, the acuity would read 6/15.74. That is an acuity nearly midway between the common 6/18 and 6/12. I know of no test cards with a line of letters or figures of either 6/16 or 6/15 upon them, but it would not be difficult to construct such lines. The letters required would measure 22.7 mm. in height, as compared with 6/18 of 26 mm. and 6/12 of 17.5. If the surgeon has not provided himself with such lines of letters he can get an approximately equal measure by requiring his patient to read 6/18 promptly and correctly, and at least half the letters shown in 6/12 lines.

Muscle Balance and Light Sense.

When a patient consults an ophthalmic surgeon on the state of his vision and its sufficiency for driving, it is certain that the surgeon should not confine his examination to visual acuity, though that only is recognized by the Regulations. The patient's muscle balance, his light sense, and the effect of the form of the lenses needed to obtain good acuity will come into consideration, and to some extent colour vision also.

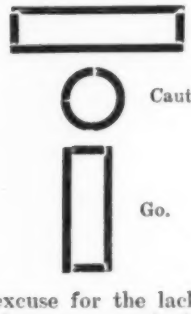
Defect of muscle balance likely to cause diplopia in states of fatigue will require caution. In lower degrees of defect the driver will not be likely to be unsafe, but he should be cautioned against lengthy drives, or driving when not in good health. In higher degrees of defect with frequent symptoms of diplopia there will be added risks, unless the defect can be satisfactorily corrected, or the driver learns to drive with one eye only. It is certain that a driver with diplopia should not drive with both eyes open. Most people with this defect are wise enough not to attempt to drive.

A good field of vision is of the highest importance, not only to the driver, but for all forms of locomotion. A loss of 20 to 30 degrees of the peripheral field renders the subject liable to bump against foot passengers as he walks abroad, and he is certainly unsafe to drive. I have never found a patient with this defect who did not recognize his disability for driving.

Light sense is of importance in night driving, and in this connexion it is convenient to consider the effect of the form of lenses required to give good visual acuity. Myopes, especially those with high degrees of defect, are conscious of their poor vision in the dusk. The form of their lenses disperses the rays of light and reduces the light received by the eyes. The deficiency, both for the myopes and for those whose defective light sense is purely retinal, can be recognized by the use of the perimeter. If the peripheral field be mapped out in good daylight, and then again after the adjustment of the window blinds, so as to reduce the illumination to one-tenth of the full light, the reduction of the field of vision will be evident and demonstrate the risks of the disability. Subjects of these defects will be safe drivers in the daytime, but at night they may be dangerous. Mostly they recognize the defect and avoid night driving.

Traffic Signals and Colour Vision.

Defects of colour vision should not constitute any disability for driving either by day or by night. But the growing practice among local authorities of placing coloured signal lamps at road crossings has introduced a real difficulty for the colour-blind. Signal lamps of red, yellow, green, and white are springing up everywhere. A mistake in reading one of these signals may bring the colour-blind driver into conflict with the police, and possibly into collision with other drivers or pedestrians. There is no excuse for the lack of thought displayed in the design of these new road signs. It would be just as easy for the authorities to make the signals recognizable by shape as by colour. They need three signs, for "Stop," "Caution," "Go." If these signs were arranged upon a uniform plan, with a horizontal bar of light for "Stop," a circular light for "Caution," and a vertical bar of light for "Go." they would be more easily recognized by all.



The lights might be coloured, or not, as the authorities thought pleasing, but the shape would be the determining character.

The advice we may think well to give to our patients upon the state of their eyes and vision, apart from the degree of visual acuity, and their ability to pass the standard set by the Regulations, is outside the scope of this note. But my experience leads me to believe that advice given in the patients' interests will be well received. Intelligent patients are anxious neither to endanger their own lives nor the lives of others by taking risks that conditions prevent them from controlling.

PUBLIC HEALTH CONGRESS.

Sir Arthur Newsholme and the Insurance Medical Service.

At the first of the sessions of the Public Health Congress, held at the Royal Agricultural Hall, London, from November 17th to 22nd, an address was given by Sir Arthur Newsholme (formerly Principal Medical Officer to the Local Government Board) on the subject of "Medicine and the State."

Sir Arthur Newsholme covered a wide range of discussion in reviewing public health medical activities, and laid down certain generally accepted postulates concerning medical services needed for the mass of the population, but subsequent speakers almost entirely concentrated on his criticisms of the insurance medical service. In speaking of voluntary hospitals, he said that, unhappily, in many areas these continued to treat out-patients for whom there was ample medical provision by panel doctors. He also stressed the abuse of out-patients by the voluntary hospitals. "The vast economic loss of working hours for men and of domestic work for women implied in present conditions would, if capitalized, pay—as is most desirable—salaries to an increased staff of junior hospital physicians and surgeons, who would then be honourably bound to attend at stated hours, and for whose patients an appointment system could be arranged, which would prevent the perfunctory and hasty work now too common." Speaking with regard to tuberculosis dispensaries, he considered that in so far as clinical work was done there, responsibility should ultimately revert to medical practitioners in family practice. It had been an unfortunate result of the panel system as now operating in this country that private individual medical responsibility had been too readily abandoned. One postulate which Sir Arthur Newsholme laid down was that it was dishonest to assume or continue responsibility for the treatment of a patient unless one had sought to obtain accurate knowledge, determined by detailed examination of his physiological systems, of the patient's fundamental conditions of health. This applied to some panel and other private medical practitioners, as well as to much dispensary work, and he thought it should be a condition of receiving an insured person on his list that the doctor should act in accordance with this postulate, besides acquainting himself with the occupational or other risks of his client's life. If this condition of honest medical practice were met it would lift the panel practice of a large minority of the medical profession out of "its present quagmire of dangerous superficiality. Incidentally, it ought to go far to reduce the present extravagant prescription of unnecessary drugs; for a doctor's prescription is often a mere placebo, covering sometimes an incomplete diagnosis, the completion of which was attainable, and covering perhaps oftener the waiting and watching period before a diagnosis is practicable."

The speaker dealt severely with the conditions of insurance medical practice in this country. The fact that the Insurance Act had become a permanent part of social machinery, notwithstanding its many flaws and especially its "propping up an already obsolete type of medical practice," was remarkable testimony to the genius of the civil servants who made it workable, though at an expense entirely disproportionate to the benefits received. The defects on the medical side were obvious; the most serious of them was the absence of consultative services, the usual failure to provide hospital treatment when needed, and

the non-inclusion of dependants. "There is the further essential defect in the British system that no panel doctor is required or expected to treat any of his patients with skill which is beyond the average medical skill of a general practitioner. . . . In our medical insurance system in this country we have doctors incompetent to give the average care for which they are paid, and we have very many others who discover conditions requiring medical care in their panel patients, with which their medical skill is quite competent to cope, but which they may refuse to treat within the terms of their contract of service." With regard to the burning question of medical certification, Sir Arthur Newsholme continued in these terms: "This [the giving of a certificate of inability which meant a cheque to be paid by the approved society] has meant the moral degradation of individual doctors who have certified without thorough examination of a patient, and without realizing their responsibility not to certify merely because the patient desires it. Such cases, I am confident, are very exceptional; but borderline cases are numerous, and in such cases the doctor desires to give his patient the benefit of the doubt. . . . How can this sinister association of medicine and money be avoided; or, if it is inevitable, how can the weakness of a doctor wishful to please his patient, and the unscrupulous or unthinking desire of the patient to have a rest from work, even when he is not incapacitated, be counteracted?" He doubted whether an effective remedy for over-certification was practicable unless sickness insurance societies were regionalized and placed, in many respects at least, under county and county borough administration. He concluded with the remark that the success of the contract medical work of sickness insurance was primarily a question of character, preponderantly the character of the insured, but also the character of the panel doctor.

Dr. H. B. Brackenbury took up Sir Arthur Newsholme's criticisms on three points. It had become a commonplace, he said, especially for lay people, to ridicule the "bottle of medicine." He could assure any who were sceptical about the matter that he could give them a bottle of medicine, the efficacy of which in a very short time they would not be disposed to dispute at all. There were very many drugs which were of the highest value in the practice of medicine, and without which the lives of patients would be very much less comfortable. He protested against the reiteration of this disparagement of the use of drugs, which never failed to produce a titter. There were many other ways of treating disease than the use of drugs, but drugs remained a very important part of the science and practice of medicine. Numbers of drugs were specific in the treatment of disease, and others led to the amelioration of distressing conditions. In the next place, he complained of Sir Arthur Newsholme's reference to "the average medical skill of a general practitioner." The word "average" nowhere occurred, either in the Insurance Acts or regulations or the terms of service under which the doctor acted. There was a definition of the scope of the treatment which an insured person was entitled to have under his contract, and that scope was set out as everything which he could expect in the way of medical treatment which did not involve special skill of a kind which general practitioners as a class could not reasonably be expected to possess. There was nothing about the average skill of a doctor to which certain doctors did not live up. That was a very serious misunderstanding in this connexion. He also complained of an implication in the address that the work of the insurance practitioner was almost necessarily superficial.

Sir Arthur Newsholme intervened to point out that his reference to the too ready abandonment of individual medical responsibility related solely to tuberculosis.

Dr. Brackenbury went on to criticize the words "its present quagmire of dangerous superficiality." He did not understand some of these references, nor did he understand the remark about "propping up an already obsolete type of medical practice." Quite candidly, he had no idea what that meant. There was a general suggestion in the address that a very large number, if not the majority, of insurance practitioners did not in fact take a thorough interest in their insured patients, and were very liable not to make a complete examination of the patient's condition. These things he repudiated with great emphasis. A comparison between insurance practice and medical practice in general would, in his experience, be favourable to the former. There were all sorts of things in medical practice which they wished were not there, but if the average attention and results obtained in insurance practice were compared with like things in everyday private practice, it would be found that the insurance patient had by no means the worse of it. Moreover, the contractual relationship between the insurance practitioner and the insurance patient was exactly the same *qua* doctor and patient as between a private practitioner and a private patient. (Cries of "No.") Indeed, in one respect, the insurance patient had an advantage, because if he, as a private doctor, were asked to attend a private patient, he was at liberty to stay at home and decline to go, whereas if he were called to an insurance patient he had no option but to go.

Dr. Graham Little, M.P., deprecated, on the ground of economy, the proposals to extend the national health insurance services, and pointed to the recent great achievements of the voluntary hospitals, without whose help, he said, the National Health Insurance Act would have foundered long ago in hopeless chaos. The insured population could count upon that resort to get the treatment which the National Health Insurance Act had not provided for them.

Dr. Alfred Cox protested that Dr. Graham Little appeared to complain because the insurance system did not give something that it never pretended to give. When Mr. Lloyd George came to the British Medical Association in 1911, and was told that his system was not complete, he replied, "I know it is not, but I believe in walking before you run. I am starting this system with the provision of the family doctor, and you can build the other services up afterwards." The speaker also took up Sir Arthur Newsholme's point about out-patient departments. If these departments were used for accidents and emergencies, and for a second opinion in cases where such opinion was needed, as well as for giving such specialist attention as could not be obtained elsewhere, they would be doing very fine work. They did that, but they did a good deal more which was a pure waste of money. Every hospital liked to talk about the great increase in out-patients, but this was very largely due to a class of patients who could perfectly well get their attendance elsewhere, and ought to be told to go elsewhere. There was every day at these out-patient departments a constant queue of people who went there simply to get attention for chronic diseases. To reform the out-patient department would be a practical step, which might be undertaken very quickly; it would result in the saving of the time of the staff and the money of subscribers, without injuring anybody.

Sir Arthur Newsholme, with regard to Dr. Brackenbury's comments, said that he had a warm admiration for him as a medical statesman who had done great things for his profession. On this occasion Dr. Brackenbury had departed to some extent from a statesmanlike attitude; he must have regarded him (Sir Arthur Newsholme) as suspect to begin with, and have then read portions of sentences which fitted in with his suspicions. He agreed with what he had said about the bottle of medicine, and that medical practice could not get on at all without drugs; even placebos were sometimes necessary for the mental health of the patient. But there was a large mass of unnecessary drug-giving in insurance practice. With regard to the point about average skill, he had listened to Dr. Brackenbury's explanation, but it appeared to him to be the difference between tweedledum and tweedledee; they were mere verbal points. There remained the fact that a large number of practitioners did not give all the treatment to their patients which they were quite competent to give, simply because they were above the "average." By "propping up an obsolete type of medical practice," he meant over-medication by drugs, symptomatic treatment, lack of hygienic advice, and too little prevention. Mr. Lloyd George had said that national insurance must walk before it could run, to which his reply would be that all it had been doing up to the present had been "hopping around."

Sterilization of the Unfit.

An interesting though inconclusive discussion took place at the congress on the subject of the sterilization of the unfit. The chair was taken by Mr. Walter Hedley, K.C., Recorder of Newcastle-on-Tyne. Dr. C. P. Blacker put forward the view of the Eugenics Society, which, he said, did not propose the sterilization of large numbers, nor did it regard sterilization as anything but an auxiliary and additional measure to segregation. The safeguards his society proposed included consent of the person (when this could be given), consent of the spouse (if any), consent of the parent or guardian, and consent of the Board of Control. The Board took a very cautious attitude to the matter, and that in itself was a great safeguard. It was argued that not enough was known about the inheritance of defect to legalize sterilization, but the Board had advocated forbidding the marriage of defectives. If enough was known to forbid marriage, enough was known to legalize sterilization. It had been held that sterilization would lead to promiscuity and venereal disease, but to forbid marriage was more likely to have this effect, because that was to dam up two instincts: the sexual, and the desire for a stable home. Sterilization merely prevented parenthood, and was far less likely to remove any bar to promiscuity in a defective than in a normal person fully aware of the consequences of his acts.

Dr. W. F. Menzies, speaking for the Royal Medico-Psychological Association, said that that body would have nothing to do with sterilization in mental hospitals, though it agreed that there was something to be said for its application to suitable cases of mental defect under proper safeguards. Dr. A. F. Tredgold, for the Central Association of Mental Welfare, considered that quite a strong case could be made out for sterilization of patients of mental hospitals, who had intermissions during which they carried on normal life, and begot children. For mental defectives he thought segregation was indicated; these people could not compete in the normal world, and any contribution they made to their upkeep must be made under sheltered conditions, and therefore they should be segregated. He pleaded for an impartial investigation by a Royal Commission before anything far-reaching was decided. Dr. W. A. Potts said that he was in favour of sterilization under proper safeguards, but he pointed out that talk about sterilization was being made the excuse by backward local authorities for not getting on with their proper duty of ascertainment and providing colonies for mental defectives.

Some lay persons, including a member of the Mental Hospitals Association, spoke strongly in favour of sterilization, and a learned Jesuit equally decidedly against.

The School Medical Service.

Sir Charles Trevelyan, President of the Board of Education, addressed the congress. He said that even when all the common and obvious defects of childhood had been adequately dealt with in the schools, the school health service would by no means have reached its full development. There must be extension of the treatment of delicate children in open-air schools and by artificial light; further measures must be taken to counteract crippling conditions, and the health of children under school age must be protected in nursery schools and by a regular system of medical examination. Local authorities had begun to realize the importance of training in the principles of health, and the reorganization of the elementary schools offered a great opportunity for the definite inclusion of that subject in the school curriculum.

A paper on the school medical service was read by Dr. W. M. Ash, county medical officer of health and school medical officer for Derbyshire. He declared that so far from undermining parental responsibility, the medical service had led to a vast improvement in the cleanliness and clothing of the children. Education in healthy habits and hygienic principles was just as important as the teaching of arithmetic. In the discussion which followed, Dr. R. H. Crowley, of the Board of Education, stressed the need for medical care of children under 5, and adolescents between 14 and 18. The extension of health teaching was emphasized by other speakers.

Voluntary Hospitals and the State.

The Incorporated Association of Hospital Officers arranged a discussion on the question of co-operation between voluntary and council hospitals. In an opening paper Mr. A. H. Leaney, house governor of the Birmingham General Hospital, asked whether it was desirable and practicable that there should be effectual co-operation between the voluntary hospitals, with their long tradition of unpaid medical service and a "personal" note in the care of the sick, and the municipal hospitals served mainly by salaried and full-time medical men. He thought the difference between the two classes of hospitals superficial, now that most of the patients in voluntary hospitals paid towards treatment and maintenance, and the custom of paying medical staffs was beginning to creep in. Moreover, the voluntary hospitals were no longer the only schools of training for doctors and nurses, since mental disease, tuberculosis, and infectious diseases were treated in municipal hospitals. The voluntary hospital system was open to a certain amount of criticism, particularly in regard to the out-patient departments, and the regrettably long period during which critical cases were often kept waiting for admission to the wards. He thought the voluntary hospitals should invite the representatives of public hospitals to meet them in consultation as to the best means of improving on the present wasteful and unsatisfactory dual system.

A discussion ensued in which many members of local authorities and hospital boards took part. Some advocated amalgamation rather than mere co-operation, saying that the present voluntary system was spasmodic, intermittent, and inadequate. A representative from Chester pointed out that the association of voluntary and council hospitals would work differently in different areas. In some towns the voluntary hospital would continue to do the highly skilled surgical work, the municipal hospital not being so well provided. The voluntary hospitals had their defenders in the discussion, which was wound up by Sir James Michelli of the Seamen's Hospital, Greenwich, who declared that the voluntary hospital would always attract to itself the most able and brilliant men and women of the medical profession.

Maternal Mortality.

Professor Edward Mellanby, at one session of the congress, gave an address on maternal mortality. He described the investigation which he had made, with Dr. H. N. Green, through the help of the Medical Research Council, on the cause of the diminished resistance to infection at the time of childbirth. For many years he had been interested in the effects of diet in raising and lowering the resistance of animals to infection, and, following upon animal experiments which showed that the addition to the diet of a sufficient quantity of vitamin A prevented the development of septic foci, he had had the opportunity of using vitamin A as a therapeutic agent in certain cases of puerperal septicaemia, and also of giving it prophylactically in the ante-natal department of the Jessop Hospital, Sheffield. The cases were too few to establish complete proof of the anti-infective action of vitamin A in puerperal sepsis, but so far as they went they were definitely in favour of this action and bore out the experimental work. "I would far rather believe," said Professor Mellanby in conclusion, "that the reason for the fact that whereas the maternal mortality in England is 5 to 5.8, and that of France is only 2.5 and Italy 2.8, is not that doctors and midwives in England are less skilful than those of France and Italy, but that the French and Italians have a better appreciation of the protective value of vegetables, and probably of dairy products, than the English."

Reasons of space permit no more than a mention of other papers and addresses. The subjects dealt with included physical education in the new senior schools, the value of the open space in modern social economy, practical aspects of the mental health problem (a subject introduced by Dr. T. Beaton), the social problem of mental deficiency (brought forward by Dr. E. S. Litteljohn), industrial psychology in relation to public health, and various aspects of sanitary engineering.

British Medical Journal.

SATURDAY, NOVEMBER 29TH, 1930.

CARDIO-VASCULAR SYPHILIS.

SYPHILIS has not always been recognized as a grim figure among the etiological factors in heart disease. In fact, the existence of syphilitic disorders of the heart gained no general recognition until Ricord gave his description of gummatous myocarditis eighty years ago. The last decade of the nineteenth century saw, especially in France, a fresh access of interest in this subject, while the discovery a few years later by Schaudinn of the *Spirochaeta pallida*, and by Bordet and Wassermann of the complement-fixation test, provided new implements for the use of the clinician and the pathologist. But even with the increasing knowledge of cardio-vascular syphilis, attention has been almost exclusively focused upon the aorta, the aortic valves, and the coronary orifices until the last ten or twelve years. In 1918 Warthin[1] put forward the view that gummatous changes were not valid criteria of the presence of myocardial syphilis, and that damage to the heart muscle was commonly represented by a mild, diffuse, inflammatory change. Since then, interest has been directed to the possibility of differentiating such changes from those attendant upon gradual ischaemic necrosis.

With these divergent and often controversial matters assuming an ever-increasing importance in medical literature on both sides of the Atlantic, it is valuable to know the mature views of an authority on this subject. Elsewhere in this issue (at page 893) will be found an admirable summary, by Dr. Carey Coombs, of the pathological, clinical, and therapeutic problems presented by cardio-vascular syphilis. In their latency, their frequent coexistence in the same individual, and their lymphatic origin, Dr. Coombs draws a close analogy between tabes and cardio-vascular syphilis. He considers the latter in terms of aortitis, and looks upon the initial pathological process as an inflammatory tide breaking upon the aorta, the brunt of damage falling upon the supravalvular part of the aorta, the valves, their commissural attachments, and the orifices of the coronary vessels. Even apart from the burden laid upon the heart by aortic incompetence, the medial damage and consequent loss of the elastic recoil in the aorta must seriously impair the peripheral circulation. Although the blood supply to the myocardium is often reduced in cardio-vascular syphilis, this is brought about nearly always by constriction of the coronary orifices. That these arteries are but rarely involved in their course by a syphilitic process is shown by the infrequency of myocardial infarction due to syphilis. Levine[2] found that less than 5 per cent. of patients suffering from coronary thrombosis had a positive Wassermann reaction, and even in such patients the arterial disease was not necessarily attributable to syphilis.

Recalling the increased incidence of syphilitic infection in the years during and after the war, Dr. Coombs comments on the possibility of large numbers of cases of cardio-vascular disease appearing in the forthcoming decade, when the usual latent period of fifteen to twenty years has elapsed. Clearly, the occurrence of such an increased incidence will suggest that the adoption of more widespread and intense antisyphilitic treatment has been without avail; at the same time it will impress upon the medical profession, and particularly the general practitioner, the necessity for early diagnosis. For even if there has been no antisyphilitic treatment, or if this has been unsuccessful in preventing cardio-vascular involvement, appropriate treatment may even at so late a stage delay the inevitable fatal outcome. Since the usual initial lesion is an aortitis, it becomes necessary to recognize this condition. The author comments upon two important points in the symptomatology of the disease at this stage: while breathlessness with effort is a common complaint, bouts of nocturnal dyspnoea are not infrequent; further, the precordial pain which the patient experiences appears definitely to be of cardiac origin, and yet may be unrelated to effort. Two other important manifestations of aortitis are the presence of an accentuated aortic second sound in conjunction with a normal or low blood pressure, and obliteration of the normal resonance over the upper half of the sternum. While the disease is at this stage the *x* ray may or may not show a dilatation of the aorta. Summarizing the points in radiological diagnosis, Steel[3] states that syphilitic aortitis can be suspected under the following conditions: first, when a diffuse dilatation of the aorta, often with hazy borders, is associated with a heart shadow of normal size; secondly, when a dense, high, aortic shadow is found in a young individual without previous hypertension; and, thirdly, when localized dilatation associated with localized increased pulsation is demonstrable.

In the early days of the arsenical treatment of syphilis the striking results achieved in many cases of secondary syphilis led to the free administration of these preparations to cardio-vascular syphilitics. Unfortunately it led also, in the hands of many clinicians, to a crop of sudden deaths at the time of injection or within forty-eight hours. A further and later ill effect that has at times been attributable to too intensive use of arsenic is that resulting from the rapid resolution of syphilitic inflammatory tissue that may follow. When this occurs the general condition of the patient improves remarkably, but an accentuation of the original cardiac defect simultaneously sets in—the therapeutic paradox of Wile. Because of these unfortunate effects the arsenical preparations fell into disuse for syphilitic heart disease, the old-fashioned iodide and mercury taking their place. At the present time opinion remains divided on this point; some assert that the risks are not justified when cure is impossible and the likelihood of improvement remains questionable; others (and these are rapidly becoming the majority) believe that the risks are slight provided small doses are given at relatively long intervals. Dr. Coombs recommends doses of 0.3 gram of novarsenobenzol at weekly intervals.

A contribution to our knowledge of the value of arsenical treatment in aneurysm and syphilitic aortic incompetence has recently been published by Moore and Danglade.[4] They found that in a group of patients suffering from aortic aneurysm the duration of life from the onset of symptoms averaged nine months in untreated patients, while in those adequately treated there was a prolongation of life to an average of nearly six years. Similar results were observed in a group of patients suffering from syphilitic aortic incompetence. Two therapeutic principles emerge from the foregoing considerations of treatment: first, as Dr. Carey Coombs points out, the

[1] Warthin, A. S.: *Amer. Journ. Syph.*, 1918, ii, 425.
[2] Levine, S. A.: Medicine Monographs, xvi, *Coronary Thrombosis.*
[3] Steel, D.: *Amer. Heart Journ.*, 1930, vi, 59.
[4] Moore, J. E., and Danglade, J. H.: Ibid., 1930, vi, 143.

importance of adequate antisyphilitic treatment in the early stages of the infection; and, secondly, a careful administration of novarsenobenzol after previous courses of iodide and mercury, in patients suffering from cardio-vascular syphilis. These measures offer the best hopes of averting or delaying the too frequent disasters overtaking syphilitics in middle life.

CITY NOISE.

When, in 1928 and 1929, the press was calling for measures to mitigate the noise nuisance, and the British Medical Association, which had been largely responsible for the public interest in the subject, was formulating proposals to secure this end and bringing them to the attention of the Government departments concerned, it seemed that here, perhaps, was a campaign that would not end till its objectives had been gained. The agitation in the newspapers has died down; the Association and the other important public bodies who interested themselves in the subject have passed to other business; the Government has tinkered with one or two of the worst acoustic outrages; but the hooting and rattling, the hubbub and clatter, go on exactly as before. That there was some danger of this happening was predicted in these columns two years ago, when the campaign against noise was at its height.[1] "The price of freedom from noise," we said then, "is eternal vigilance." But eternal vigilance is just the price that the public is not prepared to pay—at any rate for what must seem to it, judging from its own contributions to the general pandemonium, as but a doubtful blessing. Fortunately for those who serve the public, they are not concerned with giving it what it wants, but with finding out what the public ought to want, and striving to secure that; and in this exposition of the technique of democracy rests the justification for continuing a propaganda in which the public has betrayed but a fickle interest.

They order, it seems, these matters better in the United States. In the most populous city of that country the public health authorities have not only investigated with immense thoroughness the problems created by urban noise, but by the press and the radio, by poster and pamphlet and by every other available means of publicity, they impel the masses, on whose behalf they are working, to be interested in and to approve what is being done on their behalf. A report[2] lately published by the Noise Abatement Commission of the Department of Health, New York, is a model of what such a document should be. In language that all may read and understand, and with a wealth of illustrations, including photographs, charts, cartoons, and simple graphs, it explains to the American public not only the conclusions that have been arrived at by the body of physicians, neurologists, otologists, lawyers, physicists, and engineers of which the Commission is composed, but how, by its own efforts, the public can contribute to the elimination of this unpleasant and even dangerous by-product of our machine age. For details of the method which the Commission finally adopted for measuring the intensity of noise, by reference to an arbitrarily chosen unit, the report itself must be consulted; here it may be said that in the absence of such a method the precise survey of New York street noises that the Commission has carried out would have been impossible, and no reference points would have been available in terms of which the efficacy of measures designed to secure noise abatement could be accurately estimated. But the Commission's conclusions about the effect of noise on human beings accord so closely with those expressed in the British Medical Association's Memorandum on Noise submitted on October 23rd, 1928, to the Ministry of Health,[3] that they are worth stating in full. The Commission found that: (1) hearing is apt to be impaired in those exposed to constant loud noises; (2) noise interferes seriously with the efficiency of the worker; it lessens attention and makes concentration upon any task difficult; (3) in the attempt to overcome the effect of noise, great strain is put upon the nervous system, leading to neurasthenic and psychasthenic states, and necessitating frequent recuperation in the country to maintain mental efficiency and alertness; (4) noise interferes seriously with sleep, even though in some cases it appears that the system is able to adjust itself so that wakefulness does not result; (5) it is well established that, over and above these other evil effects, the normal development of infants and young children is hindered by constant loud noises.

This is not the place to describe the proposals of the Commission for restraining the hubbub it has analysed and measured—the noises of horns, sirens, open exhausts, defective engines, pneumatic drills, loud speakers, barking dogs, late parties, and a hundred other sources of disturbance which it has made the subject of its painstaking investigation. Here we would only say that most of these proposals are as applicable to our own country as they are to the United States; and that not only the American public, but the public of every country that is now grappling with the noise problem, is indebted to the New York Commission for the most comprehensive study of the matter that has yet been made.

[1] *British Medical Journal*, November 24th, 1928, p. 948.
[2] *City Noise*. Report of the Noise Abatement Commission. Department of Health, City of New York. 1930.

SCIENCE MEDALS.

A supplement to the issue of *Nature* for November 15th describes the science medals given by learned societies in Great Britain, Ireland, and the Dominions. The awards are classified under three main headings: general; the physical and mathematical sciences; and the biological sciences, including geology and geography. In each case an account is given of the terms of the trust or foundation under which the medal is allotted. Scientific achievement in this country is recognized by the award of a medal rather than by a monetary prize, and the tendency is to establish fellowships and post-graduate endowments to provide opportunities for definite research. In a brief introductory essay on the art of the medallist it is justly observed that a beautiful design in bronze or silver is more desirable than a mediocre pattern in gold. There is no doubt that the exquisite art of medalling has been neglected in this country, partly through ignorance and lack of support. The artist in this medium must have a sense of the material and its special technique, a gift for adapting a decorative design to limited space and shape, and a penetrating divination of the achievement to be honoured. In this country these essential qualifications are still imperfectly realized. Since the revival of the art, which began about 1870, the French artist has been supreme in crystallizing and expressing his ideas, and the medal in France is almost universally esteemed. Even there, however, the triumphs of Italian Renaissance masters, like Pisanello and Caradosso, have never been equalled. The degeneration of the medal as a form of art, distinct from the coin on the one hand and the sculptured

[3] *Supplement*, November 10th, 1928, p. 209.

medallion and bas-relief on the other, is explicable only by an inquiry into the social and psychological conditions of the time. It might form the subject of an instructive thesis. For the modern science medal the artist is usually required to portray on the obverse side the lineaments of some person whose achievements are connected with the *raison d'être* of the foundation, the reverse being decorated by an appropriate design or device. The reverses of most of the medals of earlier centuries drew their inspiration from Greek and Roman coins, and they assist the designer of the science medal in associating pagan derivatives with modern advances in knowledge. Thus, on the reverse of the Nobel gold medals awarded for physics and chemistry, Nature is personified as the goddess Isis. The design, however, may be wholly pictorial. The reverse of the gold medal struck in 1907 by the Royal Swedish Academy of Sciences to commemorate the two hundredth anniversary of the birth of Linnaeus depicts a student dissecting a flower. Medals of satirical implication were in circulation at the end of the sixteenth and throughout the seventeenth century, and it is rather remarkable that science does not appear to have suffered from this form of abuse. While many lampoons and caricatures were published deriding Jenner's discoveries, no satirical medal was issued. According to the lists that follow the essay in *Nature*, almost a score of medals are awarded by medical societies alone in Great Britain, so that this "little art," which has been defined as the link between painting and sculpture, is not without encouragement.

TRUTH AND SELF-INTEREST.

MR. JUSTICE MCCARDIE'S observations on the spread of perjury have been so widely quoted in the daily newspapers that we need only draw attention here to some of the other parts of his Maudsley Lecture, delivered before the Royal Medico-Psychological Association in the Great Hall of the British Medical Association House on November 20th. The announced subject of the lecture was "Truth," which the judge defined very broadly as conformity to fact or reality. He asked whether psychologists could offer any suggestions as to tests which might be applied by those whose duty it was to elicit the truth in legal proceedings or elsewhere. The day had gone by when psychology was a mere aggregate of uncertain data; it was now more than a mere division of philosophy or branch of science; it was a practical art. Any psychologist who could formulate some means of ascertaining truth in evidence would be a benefactor to the cause of justice. In what spirit should the search for truth be approached? Mr. Justice McCardie indicated certain enemies of truth. The spirit of enthusiasm was often such an enemy. Lord Balfour once said truly that enthusiasm was a great thing, but it was a pity that so few enthusiasts could be trusted to speak the truth. The psychology of enthusiasm still awaited the attention of expert students of human nature. Truth had other enemies—namely, fear, self-interest, and bias. Lack of courage lay at the root of much that lowered the standard of public life. Too many whispered to themselves the words of Voltaire: "I am fond of truth, but not of martyrdom." Self-interest sapped the truth in innumerable directions. With regard to every controversial utterance, written or spoken, the question should be asked, "What (if any) self-interest has the writer or speaker to serve?" The history of bias, again, had yet to be written. Here was a subtle and powerful enemy to truth, with its tentacles spread in every direction. Few realized the operation of bias in the great sphere of argument and opinion. It worked surreptitiously, and produced effects beyond measurement or calculation. How greatly a frank admission of partisanship would weaken the force of many arguments and create a corrective and beneficial mistrust among those who read or heard. If partisanship were confessed, the danger would be known and often averted. The judge then made the remarks on perjury which have had such wide publicity, adding, however, that a vast amount of incorrect testimony was given every day by the perfectly honest witness. It was often assumed that the calm, self-restrained witness was giving truthful testimony, and the nervous, flurried witness false testimony. Both these assumptions were untrue. Murderers, giving evidence on their own behalf in the witness-box, usually gave it in a wholly dispassionate way, with singular ease of manner. Broadly, it might be said that the greater the criminal the more able and effective he was as a witness. The habitual criminal was probably the best witness of all. Nothing could exceed the skill, self-confidence, and audacious reliance on sex that was very often displayed by the intelligent female perjurer, and she had, as a rule, a histrionic sense not possessed by the ordinary man. On the other hand, the judge gave two examples of perfectly truthful witnesses, both of whom cut a lamentable figure in the witness-box, and had a manner which would have made many people doubt their evidence. The reason for their attitude in both cases was that they feared lest some question by cross-examining counsel, made in order to shake their credibility, should compel them to disclose something in their past life which had nothing whatever to do with the issue then being tried. Mr. Justice McCardie was proposing to omit the part of his lecture relating to the expert witness, but in response to requests from his audience not to leave this subject untouched, he offered a few remarks. The expert witness, he said, had been the subject of much criticism and denunciation. Such a witness dealt primarily with questions of opinion. So far as he asserted facts, he stood on the same footing as the ordinary witness. The conflict of opinion between expert witnesses was sometimes astounding, but, of course, it was a fact that experts differed outside as well as inside the courts. Apart from the honest and almost unavoidable clash of opinion, there was a tendency, sometimes a strong one, for the expert in the witness-box to become a partisan, and it was this tendency which led to the greater part of the invective often heard against the expert witness. "The subject of expert testimony," said Mr. Justice McCardie, "is one of singular interest, but I will only add, and with pleasure, that in my view the quality of that testimony is steadily improving. The explanation of this is to be found, not in any greater appreciation of the oath, but in the ever-growing standard of integrity, fairness, honour, and dignity among the honourable members of the great expert professions."

PAINTING AND THE HEALING ART.

THE eighth David Lloyd Roberts Lecture, under the auspices of the Royal College of Physicians and of the Medical Society of London, was given at the House of the latter by Mr. William Rothenstein, M.A. (Principal, Royal College of Art, South Kensington), who spoke from the point of view of an artist on "Painting and the healing art." Mr. Rothenstein said that he found it difficult to believe, when he realized the extraordinary intellectual power of the mediaeval artists, that mediaeval science had in it those elements of charlatanism of which so much had been made by the historian. Looking at the culture of the Middle Ages, it was not easy to imagine that scientific men, especially healers, could have been so mixed up with astrology and the baser sciences as was commonly supposed. It was probable that the same thing happened among scientific men as happened among artists in every age. Just as anybody to-day, visiting a railway bookstall, would find it hard to believe from the literature exhibited

that this was the generation which had produced an Einstein, so probably in an earlier age the popular side of the healing art and of what was now called science in general was chiefly known to the people, while the finer and more serious elements then existing remained in the background, just as they did to-day, so far as the mass of the public was concerned. The subject-matter of mediaeval painting was almost entirely religious, yet it was significant how often the lives of the saints enabled the artists to betray their own humanistic sympathies and interests. In those early days it was dangerous to be pacific or perhaps even benevolent, but the artists did employ all the latitude allowed them by the Church to reveal their humanistic sympathies. Mr. Rothenstein observed that always around the saints performing miracles there were represented unusually dignified and noble-looking men whom he took to be, perhaps without justification, the scientific men of the period. In view of such gravity in portraiture as was expressed in great mediaeval and Renaissance art, he could not believe that the men there portrayed lived entirely in a world of superstition and charlatanism. He showed a series of lantern slides of reproductions of great pictures of the old Italian and Flemish school, and called attention again and again to the splendid representation of the healer or doctor of the time. It had to be remembered, in looking at pictures from the standpoint of accuracy of representation, that there had been two main streams of art. On the one hand, there was the epic or Miltonic spirit in which the artist dealt with world forces, and realized that the nice precision of detail would take away from the big quality of his theme, and, on the other hand, there was genre painting, in which the artist dealt with particular sections of life. In the latter, he believed, the artist would be found to be as accurate as any scientific physician could wish him to be. During the Renaissance, when medical science was beginning to assert itself, when the scientific spirit was allowed for the first time free expression, the artists also became interested in the more scientific aspects of art—namely, perspective and anatomy. He could not believe that Greek learning, coming suddenly into Italy, threw so great and new a light upon Italian learning as the pages of history suggested. The truth was that the opinions which men had held in private they were at last allowed to express, and this new Greek learning permitted men who had suspected certain scientific truths to utter them for the first time without fear of the dungeon or the stake. This was true both of art and of science. The study of anatomy undoubtedly helped artists, like Michael-angelo, who were under the necessity of painting figures in violent movement, a movement which they could not study from life, but which anatomical knowledge helped them to express. In the representation of still figures, the lecturer did not believe anatomical knowledge to be necessary, because the appearances hid what lay behind them. The artist worked with his eye, and the fine eye would see and enable the hand to express what the mind did not understand. Intuition, in fact, in Mr. Rothenstein's belief, was the basis of both artistic and scientific thought. The difference between the intuition of the artist and the intuition of the scientific man was that the artist could oftener in the past express his intuitions fearlessly, while the scientific man went in some degree in fear of his fellows. The Einsteins and Newtons probably had their intuitions in a flash, but they had to spend a lifetime interpreting them to others. The medical man of former times, with an acute knowledge of the human mind and a profound observation of what happened in life, was probably as good a medical man, without modern knowledge, as many living to-day. It was always possible that the medical man, even when equipped with scientific knowledge, might use formulas to no purpose, whereas a man of finer observation and intuition, and with less book learning, might in the end be of more service to mankind. The illustrations shown by Mr. Rothenstein in support of his theme ranged from "The Dying Gladiator" in the Capitoline Museum, down to the fine and eager heads of the students in Rembrandt's "Lesson in Anatomy" at The Hague.

FAITH-HEALING IN THE POTTERIES.

A SHARP controversy has arisen in the Potteries as a result of missions conducted by a certain Pastor Jeffreys—head of an evangelistic society working from Bristol—who unites with the usual methods of revivalist preaching a faith-healing campaign for which sensational results are claimed. It appears that in the course of a mission at Hanley at the end of September, when some people declared themselves miraculously cured of certain ailments, Pastor Jeffreys, after his "treatment," which, he says, consists only of prayer, removed the splints of certain cripples, patients at the hospital of the North Staffordshire Cripples' Aid Society at Hartshill, who had been referred by the local authority to that society for orthopaedic treatment. Dr. W. Mitchell Smith, who is honorary medical officer in charge of the hospital, and surgical tuberculosis officer in the Potteries, brought the matter to the attention of the medical officer of health for Stoke-on-Trent, Dr. A. Wotherspoon, who laid it before the Health Committee of the City Council. Dr. Mitchell Smith, as we gather from the *Staffordshire Sentinel*, was quite specific in his allegations. Three cripples who attended the meetings and had their splints removed were suffering from tuberculous disease of the spine; these patients were fixed on frames, and the revivalist took off the frames when the condition was such that no orthopaedic surgeon would have dared to do so. In another case of tuberculous disease affecting a joint, active and with flexional deformity, which had been fixed in a bed splint and guarding plaster, the appliance, Dr. Smith learned, had been removed. In yet another case, with a leg shortened to the extent of four inches, which had been fitted with a raised boot and calliper to prevent distortion to the spine, the calliper had been removed; and, again, in a child with a bad knock-knee, a plaster cast had been taken away. The desire to collect discarded crutches and other appliances as trophies has always been a characteristic of the faith-healer, but it is obvious that this cannot be tolerated by any authority responsible for clinical treatment. The first reaction of the local authority to these proceedings was to cancel some future bookings by the faith-healer of halls under its control at Burslem, Hanley, and Longton, but on further consideration it was decided by the General Purposes Committee that Pastor Jeffreys would be asked to give an undertaking not to interfere with the splints of children undergoing treatment at the orthopaedic hospital for whom the corporation was responsible, and that in the event of non-compliance the cancellation should take effect. This action aroused among Pastor Jeffreys's followers great demonstrations of protest. A petition was organized to which, it is stated, thousands of signatures were at once attached. The matter threatened to influence the municipal elections. The evangelist himself adopted at first a recalcitrant attitude. He declared his determination to continue his mission in the Potteries, and said that if the corporation closed its halls to him he would endeavour to acquire privately owned halls, or, failing this, build premises of his own. He also stated that he had never personally induced a cripple to cast off a crutch or support, and he had never removed an implement without the expressed desire of the patient and the consent of the parent or other person responsible. He challenged Dr. Mitchell Smith to furnish him with the names of any who were worse off as the result of his prayers, and declared

that for every such case that Dr. Smith could cite, he could bring forward twenty who had received healing and blessing at his services. But he expressed himself as prepared to give an undertaking that crippled children wearing leg supports or plasters under treatment by the various authorities should not undergo interference at his hands. This undertaking was felt not to go far enough, and a more definite reply was demanded, with an extension of the undertaking to exclude altogether the "treatment" of children for whom the corporation was responsible. Upon this, Pastor Jeffreys, declaring that his society placed the salvation of souls on a plane of much greater importance than the healing of the body, gave an undertaking that he would not deal in any manner at his revival and faith-healing meetings with crippled children for whom the corporation is responsible. On this promise it was agreed to allow him the use of the halls for his November campaign. The Stoke City Council is to be complimented upon maintaining a quite definite position, and no less upon gaining its point without giving any real ground for an accusation of intolerance. It would be regrettable if the action of the city authorities had resulted in placing a ban upon a work which—these healing demonstrations apart—is by all accounts exercising a beneficial influence upon the life of the community.

PROFESSOR ERNST FUCHS.

With the passing of Professor Fuchs, one of the great figures of international ophthalmology has gone to his rest; a much respected friend and mentor, who was held in high estimation and affection all over the world. Though in his eightieth year, he was active almost to the end of his life, for he was present at the thirteenth International Congress of Ophthalmology, held at Amsterdam last year, and he visited the United States after the congress was over to give one of the three addresses with which the Wilmer Ophthalmological Institute was formally opened in the autumn of 1929. Fuchs's name is inseparably connected with Vienna and the Viennese school of ophthalmology; he was a worthy successor of Arlt and Jaeger. Under his care the ophthalmic school not only maintained, but even increased, the reputation bequeathed to it by those great masters. A pupil of Arlt, he migrated to Liège, where he was professor of ophthalmology until 1885. It was in the year 1884 that he gained a prize at the fifth International Congress for Hygiene at The Hague for his essay entitled "The causes and prevention of blindness." In 1885 he returned to Vienna, succeeding Jaeger as professor of ophthalmology; thenceforward the Viennese school was Fuchs, and Fuchs only. *Facile princeps* as a clinician, and unrivalled as an ophthalmic pathologist, he soon became recognized as the foremost teacher of his specialty in Europe. A steady stream of papers appeared in the various ophthalmic journals, and many ophthalmic conditions became known by his name—such as the superficial punctate keratitis and the inferior crescent, or Fuchs's coloboma. His *Lehrbuch der Augenheilkunde* has run through innumerable editions in German, and, translated by Duane, has been the textbook of the English-speaking race for all senior students and practitioners for the past forty years. Last year he received the Leslie Dana gold medal for his work on the prevention of blindness; this medal was presented at the congress at Amsterdam, and Fuchs was the first man outside America to receive it. In the year 1902 Fuchs gave the Bowman Lecture before the Ophthalmological Society of the United Kingdom, his subject being his favourite "keratitis," and from 1903 till his death he was one of the very limited number of honorary members of the society. The respect in which he was held in this country is evidenced by the fact that his honorary membership was not disturbed by the great war. On retiring from the professorship at Vienna, Fuchs found himself in straitened circumstances, due to the war; his scientific achievements were recognized universally, and he embarked upon a world-wide tour of lectures, visiting Spain, the United States, and Latin America. By these means he was able to keep the wolf from the door, and the ophthalmic world was spared the sad spectacle of one of its foremost representatives living or dying in want. All honour to his American colleagues.

BRITISH CONGRESS OF RADIOLOGY.

An interesting programme has been arranged for the annual congress of the British Institute of Radiology (incorporated with the Röntgen Society), which is to take place at the Central Hall, Westminster, from December 3rd to 5th. On the afternoon of the first day the president of the Institute, Mr. C. E. S. Phillips, delivers his address from the chair. The second morning is to be devoted to the discussion of technical papers, on the physical and instrumental side of *x*-ray work, and the third morning to medical papers, one of them by Dr. H. A. Harris entitled, "The growth of bone as illustrated by radiography," and the other, which is to be illustrated by cinematograph films, by Dr. Donald Hunter, on "Changes in the bones in hyperparathyroidism and hyperthyroidism." The two memorial lectures which are held under the auspices of the Institute are arranged for congress week. The first of these is the eleventh Mackenzie Davidson Memorial Lecture, by Professor G. P. Thomson, on "Some recent experiments on cathode rays," which is to be given on the afternoon of December 4th; and the other, to be delivered on the following afternoon, is the thirteenth Silvanus Thompson Lecture, by Dr. A. E. Barclay, whose subject will be "The danger of specialization." Thus, a lecture in memory of a medical man will be given by a physicist, and one in memory of a physicist given by a medical man. The closing event of the congress will be the annual dinner on December 5th, at the Trocadero Restaurant. About twenty-four firms are contributing to an exhibition of *x*-ray and electrical equipment and sundries, which is to be opened on the first day by Sir Humphry Rolleston.

SOCIETY OF BRITISH NEUROLOGICAL SURGEONS.

The Society of British Neurological Surgeons has met twice this year—in Paris during the month of June, under the presidency of Sir Percy Sargent, and in London in November, under the presidency of Mr. Donald Armour. In Paris the members of the society paid visits to the clinic of Dr. André Thomas, who showed cases of surgical interest, including a demonstration of the pilomotor reflexes, to our knowledge of which he has contributed so greatly. A visit was also paid to the Hôpital de la Salpêtrière, where cases were shown by Professor Alajouanin. M. de Martel performed several neurological operations on three days, and Dr. Clovis Vincent also did a laminectomy for an intramedullary tumour of the cord. At the recent meeting in London Mr. Bathe Rawling and Mr. Wakeley performed operations at the West End Hospital for Nervous Diseases, Regent's Park, and their colleagues, notably Dr. Worster-Drought and Dr. Carnegie Dickson, made the meeting a most agreeable one by their demonstrations of cases, pathological specimens, and the like. Mr. Lambert Rogers made a communication on the nature of the foramen of Magendie. The society's dinner was held at the Langham Hotel in the evening.

We much regret to announce the death of Professor John H. Teacher of Glasgow, whose paper on the "Normal structure of endometrium and decidua and the menstrual cycle" appears, by a sad coincidence, in our present issue. We hope to publish an obituary notice next week.

ROYAL SOCIETY OF MEDICINE.

The Duke of York at the Annual Dinner.

The annual dinner of the Royal Society of Medicine was held on November 20th, when about 350 Fellows and guests assembled, under the presidency of Dr. T. Watts Eden, at the May Fair Hotel. The principal guest was H.R.H. the Duke of York. On the other side of the President was the Bishop of Birmingham (Dr. Barnes), and he was supported also by the two immediate Past-Presidents of the Society, Lord Dawson of Penn and Sir StClair Thomson. Other guests at the principal table were Lord Moynihan (President, Royal College of Surgeons), Sir Farquhar Buzzard, Professor Arthur Burgess (Acting President, British Medical Association), Sir Ewen Maclean, Sir Henry Simson, Sir Francis Shipway, Sir George Buchanan, Dr. R. A. Young (President, Medical Society of London), Dr. T. Vincent Dickinson, and the editors of the *Lancet* and the *British Medical Journal*.

The Duke of York proposed the toast of "The Society," and created a smile by reminding the company that the Society, under the name of the Medical and Chirurgical Society, had its origin a century and a quarter ago in a tavern, not the only great thing in history which boasted a similar genesis. After a reference to the Society's long list of eminent presidents, His Royal Highness continued: "No one can fail to rejoice that your Society maintains its standard of achievements upon so high a level. I specially admire the desire displayed by your council to make the Royal Society of Medicine an institution which shall stimulate and encourage its Fellows in their labours, however far they may be scattered at the outposts of Empire." He mentioned the library, with its information service, saying that he had been told that the librarian, having received an urgent cable from Iraq for medical information, immediately had photographs of valuable scientific papers prepared and dispatched the same day by air mail to that distant spot. He spoke also of the usefulness of the Society's *Transactions*, carrying knowledge, through the papers and discussions, to medical men in every part of the globe. He concluded by wishing the Society "good fortune and success."

Dr. Watts Eden, in reply, made suitable reference to the great interest taken by the Royal Family in organized medicine. He claimed for the Sections of the Society that it was there that medical opinion was formed. One of the important tasks of the Sections was to examine new methods and departures of all kinds, and assess their value. A new idea could not run the gauntlet of informed criticism in the Sections unless it was sound, and many an unsubstantial project had been exploded in that way. It must be admitted that medical opinion was a somewhat elusive quantity, necessarily ill defined and difficult to grasp. Members of the medical profession were often found to hold discordant or even contradictory views about many things. But at least the medical profession was not the only one in which such differences were found. It would be better to regard all such differences as evolutionary phenomena. The need for a clearing-house of medical research, Dr. Eden continued, was never greater than to-day, but the army of original workers was never so formidable. From time to time even medical terminology was reduced to emptiness by the progress of science, and discussion in some of the Sections now proceeded in a vocabulary unknown twenty-five years ago. Yet the profession must not allow itself to be swept off its feet by the enthusiastic search for something new. After all, it existed to render the community practical service, and, while it was granted that knowledge was in itself a great and desirable aim, some organization was required to translate into comprehensible terms the results announced by the laboratory worker and statistician in such bewildering profusion. The Society collectively could face a task before which any individual might quail, could comprehend the whole field, arrange the patchwork results of research into some useful pattern, and formulate the generalizations which were essential for the practical application of experimental results.

Dr. F. M. R. Walshe proposed the health of the guests, and in one amusing passage sketched that grotesque figment, the doctor of the novelist, the playwright, and the journalist:

"An amazing number of components go to make up the doctor of modern fiction, and he is a far more dashing figure that the Doctor Slop who haled poor Tristram Shandy into this world by the nose. First and foremost, he must be a surgeon; a surgeon of incomparable skill and strong sex appeal. He lets blood copiously with long sensitive fingers and the calm of the strong silent man. Incidentally, he is also a famous bacteriologist and a forensic pathologist of world repute. When he is not being followed round the wards of his hospital by flocks of adoring students, he runs a busy general practice. He never charges his patients any fees. He never has wife or encumbrances, but keeps a dark mysterious man-servant. His spare time is devoted to straightening out the unending complications that punctuate the private lives of his friends, many of whom are mysteriously murdered. Finally, and perhaps not altogether surprisingly, he is a source of ignoble jealousy in his professional colleagues. I have never seen it explicitly stated, but I am convinced that he wears a fur-lined overcoat and travels first-class on the railway. In this he comes nearest to the true surgical tradition."

The Bishop of Birmingham, in responding to the toast, said that the most exhilarating element in scientific research was that one never knew when a period of exceptionally important advance was at hand or in what region the next great discovery would lie.

"It seemed at the end of the nineteenth century—I was discussing this with Sir Oliver Lodge only a night or two ago—when I was an undergraduate, that the great era of physics had closed. Yet a greater era than that of Faraday, Maxwell, and Kelvin was just beginning. We see now that the physics of the great Victorians was but, as it were, a twilight before the dawn—a dawn made splendid by J. J. Thomson's electrical structure of matter, Planck's quantum theory, and Einstein's generalized relativity. Equally in medicine there may come at any time a group of discoveries in biochemistry which will enable medicine to give to the body an immunity from ill-health such as has only been enjoyed by exceptional individuals in the past. In fact, in our modern world, in spite of political, social, and moral disorder, it is good to be alive. There is among us the joyous and adventurous freedom which burst out at the Renaissance four and a half centuries ago. Never since the Golden Age of Greece has mental energy been more fertile than it is now."

Dr. Barnes went on to discuss what probability there was that the present era of scientific progress would come to an end—that the Dark Ages would again overwhelm Europe.

"Medical skill and public hygiene will ultimately be racially disastrous if they preserve inheritable mental and physical defects in humanity. We now know that dysgenic mutations can occur alike in plants and animals, as it were spontaneously; at any rate, knowledge as to their origin is lacking. Had we such knowledge, we might, of course, be able to prevent their occurrence. But all we can at present say is that, having appeared, they can be inherited; and unless they are eliminated by a hostile environment they remain a permanent menace to the community. Now medical science destroys the power of hostile environment, but leaves these inheritable characters untouched. To the category of such dysgenic mutations belongs apparently the group which gives rise to mental defect in man. The existence of this type of social degeneracy is a grave menace to our welfare as a community, and the families in which the defect is latent make up inferior racial stocks amounting to some 10 per cent. of the whole population. Accurate genetic knowledge is most urgently needed, and a beneficent millionaire, anxious for the future of his country and humanity in general, could well provide laboratories and chairs in all our great universities."

Finally, allowing the imagination to play with the far future, the Bishop asked whether man would be transient on the earth, like the great reptiles, like many of the most highly organized mammals. And if man did pass from this globe would some new form of life, higher in the evolutionary scale, in due course lord it over the earth and reconstruct our achievements and our existence in its schools of antiquarian research? He could ask such questions without anxiety, and would receive the answer without dismay, for he was certain, not only that man's permanent habitation was not on earth, but also that his spiritual achievements were imperishable. Aspirations and achievements, moral loyalties, love and service would not vanish as though they had never been.

PHYSICAL AND PSYCHOLOGICAL DEFECTS IN CHILDREN.

CONFERENCE OF VOLUNTARY ASSOCIATIONS.

The Invalid Children's Aid Association and the Central Council for the Care of Cripples recently held a joint conference in London to consider problems relating to those, especially children, who are handicapped by physical and psychological defects. Representatives of local authorities and voluntary bodies from all parts of the country attended to hear papers read by a number of experts.

The conference was opened by the Minister of Health, who paid a tribute to the work of the two convening bodies, and said that he knew orthopaedic surgeons would be the first to admit the value of the educational and propaganda work which the two societies had so successfully undertaken. The societies were early in the field in realizing the enormous importance of utilizing to the full the knowledge, skill, and experience of orthopaedic surgeons. Local authorities had an important part to play in the treatment of little children, but, unfortunately, in spite of the progress which had been made, there were still many areas in the country in which no facilities existed for the treatment of crippling conditions. He was personally highly gratified at the response which local authorities had in general made with regard to the provision of schemes for orthopaedic treatment and after-care. He gave some figures illustrating the progress made during the period 1926 to 1930. The number of approved schemes by local authorities for maternity and child welfare had increased during those years from 43 to 193, and similar progress was to be noted in dealing with tuberculosis and in other directions. It would probably be difficult to find such rapid progress in any other branch of the public service; nevertheless, there were still many gaps which he hoped would soon be filled. The ideal scheme, which he desired to see in operation all over the country, was to have central open-air hospitals supported by a chain of clinics. He fully realized the many claims on local authorities, but he thought it right to urge them in their own interests to develop this extremely important side of preventive work. It was almost impossible to translate human loss and suffering into money, or into terms of the burden upon ratepayers, but it was quite clear that there was enormous material loss caused by the continued existence of crippling diseases which might be wholly or largely removed if treated at an early stage. Local authorities, by reason of their permanence, could afford to look ahead. All sections of the public health service were handicapped in particular because the child was lost sight of from the time that the maternity and infant welfare centre had finished with him until he reappeared in the elementary school and came under the care of the school medical service. If the voluntary bodies and local authorities could between them ensure that the child was not forgotten after the first year of life, the Minister was certain that much would have been done to cut away the roots of many of the most serious and damaging diseases.

Prevention and Treatment of Crippling Diseases.

Sir Robert Jones, Bt., who presided over the first session, said that much had already been achieved in the training of cripples, and in finding them suitable employment subsequently. In a number of cases an effort had been made to start a colony in which such patients could reside and undertake whatever employment they were able. With regard to the adult cripple, there seemed to be the greatest difficulty in finding suitable accommodation in hospitals, and there was great necessity for increased effort in that direction.

Mr. A. H. Wood (vice-chairman, Central Council for the Care of Cripples) reviewed the progress which had been made since the previous conference in 1926. Those concerned saw with gratitude new hospitals, new clinics, and new schemes come into existence; above all, they were watching a more enlightened public opinion taking shape, a better knowledge of what was wanted, and a greater willingness to carry that knowledge to practical effect. He believed that this country was alone in having devised a scheme by means of which public authorities and voluntary societies co-operated to their mutual advantage. That was one of the arrangements, in itself entirely illogical, which seemed to appeal to people of British traditions, and which would break down at once if it were worked by others of a more logical and orderly mind. The lambs of the Invalid Children's Aid Association and the Central Council for the Care of Cripples had not been devoured by the lions of the county and county borough councils; on the contrary, they had lain down in safety and amity, and there were very few places where the public authority and the local voluntary societies did not supplement each other's work, and this without friction or jealousy. On the administrative side the outstanding progress made during the last four years had been in the linking up of the work of the different agencies. It was a truism to say that the essence of all sound remedial work for children was early discovery of the defect. The school medical service was playing a splendid part in such discovery, but it had become more and more obvious that a service which only began to operate when children were 5 years old did not begin early enough. It ignored those first vital years of a child's life, and from all points of view, especially that of the orthopaedic surgeon, it was essential that the agencies which came into contact with the early life of the child should be linked up with those which dealt with the child of school age. With regard to results during recent years, the most important fact on the orthopaedic side was the establishment of no fewer than five new orthopaedic hospital-schools since 1926. Two of these new hospitals had been established by public authorities (the Derbyshire and Lancashire County Councils), and the others, in the Devonshire, Bristol, and Nottingham districts, by voluntary effort. Increased attention had been given to the training and employment of cripples, and on the invalid children's side of the work also some encouraging progress was to be reported.

Dame Georgina Buller (Devonian Association for Cripples' Aid) described the work of local orthopaedic associations. An orthopaedic unit, she said, did not consist, as it was at first thought that it should, of a hospital with associated clinics. The clinical aspect was, and must always remain, at the heart of the cripple problem, but it was not the whole of it. The cripple must not be considered solely in the terms of a patient. Many went to the hospital, more still to the clinic, but an appreciable residue went neither to the one nor to the other, yet were none the less in need of help. Information as to the number of cripples in the country would never be complete if drawn solely from the records of a hospital or health office. She believed that along the lines of local associations, co-operating with each other and co-ordinated on a national basis, the true proportion of each part to the whole would be secured, and the way prepared for further advance.

The first session concluded with an address by Dr. S. J. C. Holden (M.O.H. Buckinghamshire), who spoke on co-operation between child welfare centres, the school medical service, and hospital schools, and suggested ways in which the services of the various county organizations might be enlisted for the ascertainment of defects and for setting in motion the following-up machinery.

Rheumatic Heart Disease.

The second session, over which Sir George Newman presided, was devoted to the prevention and treatment of rheumatic heart disease.

Dr. F. J. Poynton (Hospital for Sick Children, Great Ormond Street) dealt with the subject of acute rheumatism in the young (5 years and under). The disease, he said, was most frequent round about the tenth year, and was said to be rare under 5. There was a danger in that statement because it might lead to a false sense of security in overlooking its occurrence. A good many years ago, without much difficulty, he collected over fifty cases in young children under his own care, and seventeen more from records. Later he found in a series of 100 cases of rheumatism in his ward that twelve commenced at or

under the age of 5. He had steadily continued his inquiries up to the present time, and had collected more evidence. In the last year he had had two fatal cases at Great Ormond Street, and another little girl with a damaged heart, but not fatally so; her rheumatism had commenced at the age of 2 years. At University College Hospital he had records of another sixteen cases during the years 1925–30, and thirteen of these had organic heart disease. If one searcher could put his hand on so many cases, the suspicion naturally followed that rheumatism was more frequent at this early age than was supposed. How serious the disease was, said Dr. Poynton, could easily be illustrated. Thus in fifty-two cases there were eight deaths, and five more patients were hopeless invalids; twenty-two made partial recoveries with permanently damaged hearts. In round numbers at least 16 per cent. of cases proved fatal, many of them in the first attack; these could be contrasted with a series of older children, of whom about 10 per cent. died in the year, in which the type of rheumatism was more than usually virulent. An important point was that in these young children heart disease might be, and he believed was, the outstanding event; arthritis and muscular pains might be so comparatively slight that the transition was overlooked, though obvious arthritis was also not infrequent. It was an axiom in clinical medicine that when one got off the right track in diagnosis of an illness one might miss the obvious; thus it happened that a very young child was thought not to be really ill until suddenly the worst form of rheumatic heart disease developed. This feature of rheumatism required a prolonged investigation, not by one individual, but by many all over Great Britain. Such an investigation would make it possible, in a few years, to give to the public reliable evidence as to the real frequency of acute rheumatism in the first five years of life, together with its relative mortality.

Dr. Carey F. Coombs (Bristol General Hospital) described the steps taken in his area whereby it had been possible to bring into being a co-ordinated plan for dealing with juvenile cardiac rheumatism. It was decided to invite practitioners within a limited area—Gloucestershire, Somersetshire, and Wiltshire—to send in reports of cases answering to a certain definition of rheumatic heart disease occurring in children of school age and arising within a limited period. The project was assisted by a grant from the Medical Research Council, as well as by the moral support of the Ministry of Health and the British Medical Association. The data, if they were to have any research value, had to be submitted to some standardizing authority, and in this respect those concerned were fortunately able to secure the help of colleagues throughout the area chosen, who saw the children referred to them from the public elementary schools for an opinion as to the condition of their hearts. Thus it was possible to offer to the public authorities experienced service in the sorting and disposal of their school children with cardiac defects, and in exchange to receive the assistance of those authorities in recording and in further investigation. It would take some months to deal with all the observations and assimilate them into a report. On the treatment side it was significant that all the local authorities concerned wished the clinics set up for the examination of these children to continue. They believed that it had been of enormous value to them to have a court of appeal in cases of doubt and to receive advice as to lines of treatment. The experience of treatment, limited though it was, had taught three valuable lessons. (1) Patience and perseverance in oversight and control of these children would meet with a certain amount of reward. In children who would have become worse without these services the disease appeared to be arrested, or at all events retarded; in a few the signs of disease had practically disappeared. (2) For a large number of these children nothing more was needed than repeated examination; if this was frequent enough, it was able to detect recurrences and recrudescences which might otherwise be overlooked, and thus timely treatment could be instituted. (3) In a smaller number of cases prolonged treatment in a hospital-school was advisable. A serious gap in the organization for dealing with this, as with many other diseases arising in childhood, was the absence of a domiciliary service. A formal report had been made to the family doctor on each child examined, and there was reason to think that this step had been of some little value. The trouble was that there were many working-class families where the doctor was not called in as often as he should be, for no other reason than that means were lacking. Instead, the children were brought to hospitals, where they found the out-patient department an indifferent substitute for the services they ought to be getting at home, for no medical service could care adequately for the health of the nation that was not based on the recognition of the family as a social unit.

Dr. B. E. Schlesinger spoke on the great importance of prolonged convalescence for children recovering from a recent attack of rheumatic carditis. There must be general agreement, he said, that amidst the ideal surroundings of a country hospital the majority of children improved, and the incidence of relapse was very low. He quoted some figures from New York in support of this view: 512 children were discharged from five convalescent homes during the year, and of these the general condition was considered improved in 448. Convalescent treatment greatly lessened the number of relapses, and minimized their severity if they occurred.

The Backward and Difficult Child.

Another session of the conference was devoted to the problem of the backward and difficult child. It was presided over by Dr. R. H. Crowley (senior medical officer, Board of Education), who said that a beginning was only just being made in understanding the behaviour of children; the field to be explored was immense. Dr. G. A. Auden (school medical officer, Birmingham) opened the subject in an able paper in which he gave examples from history of crippling and deformity in distinguished individuals which had probably resulted in the warping of the mind, with results sometimes, if the victims were in positions of power, of great misfortune to the world. The problem of dealing with abnormal children was intensified by the absence of real tests of temperament except by trial and error. The difficulty lay in large part in the false values of life which the competitive struggle of the world to-day did so much to foster.

Miss L. S. Fildes (chief psychologist to the Child Guidance Clinic, Highbury) gave an account of some difficulties which arose within, and were partially occasioned by, the school system. Dull children were among the most deprived educationally; they were neglected in school for the most part, and so they developed a feeling of inferiority which prevented them from making good in life. Dr. William Moodie, of the same clinic, said that much of the trouble concerning the behaviour of children was due to lack of foresight. He had noticed how often a habit of stammering, which a child had always had in some degree, became worse when the child was just about to leave school and enter employment. The reason was not hard to find. School was now a very pleasant place, and to leave school and go into employment was for most children an unpleasant thing, so that any symptom which would tend to prevent the individual taking his place in the labour market would be exaggerated just at that time. He believed that by an investigation of the environmental situation and adjustment where it was necessary behaviour difficulties could be corrected in 90 per cent. of children. Dr. R. D. Gillespie pointed out that the manifestations of mental and nervous disability in childhood were not only of interest in themselves but of the first importance for the prevention of definite illness and incapacity. He thought it essential that official bodies interested in public health should pay greater attention to the neuroses of children than they did at present. Dr. Letitia Fairfield commented on the enormously wide range of the subject. One of the principal troubles at the back of this psychological problem was the fact that for fifty years there had been a struggle to win a bare minimum of teaching for the average child in the elementary school, a bare living wage for the teacher, and bare average equipment for the school; there had been very little time or money to spare for the equally important problem of seeing that each child had the education which he really ought to have. Thus it

happened only too frequently that children leaving school at 14 had passed through the school without having learned anything at all, although it was true that many of them made much better adjustments in after-life than they did during their school period. Nature was very elastic and gave everyone many chances, but it was no light thing to have wasted deliberately the best and most formative years of an individual's life. Dr. EMANUEL MILLER dealt with the subject of temperament in children, and Miss CLEMENCE PAINE contributed some remarks on the problems of the delinquent child from her experience as probation officer in a children's court. The discussion closed with some emphatic remarks by a member of the National Union of Teachers, Mr. CHUBB, who asked the conference to remember that it was one thing to take an individual child in the laboratory, as some speakers had done, and quite a different thing to have the difficult child as one member of a class of thirty or forty children. What was wanted was more money to deal effectively with education, and he thanked Dr. Letitia Fairfield for her reminder that the children in the schools at present only received the minimum of teaching for the average child.

Still another session of the conference was devoted to the industrial outlook of the physically disabled, at which some account was given by Dame AGNES HUNT of village settlements, and by Dr. P. C. VARRIER-JONES of the organization at Papworth. The session was presided over by Mr. J. J. LAWSON (Parliamentary Secretary of the Ministry of Labour), who stated that there were now 26,000 employers on the King's Roll, employing 370,000 disabled ex-service men.

THE HOSPITAL FOR TROPICAL DISEASES.

OPENING OF NEW WARDS, LABORATORIES, AND MANSON LECTURE THEATRE.

THE formal opening of the new wards, pathological laboratories, and the Manson clinical lecture theatre at the Hospital for Tropical Diseases, Gordon Street, London, was performed on November 20th by Mr. WILLIAM LUNN (Under Secretary of State for Dominion Affairs) in the presence of many of the officers and members of the Committee of the Seamen's Hospital Society (whose president, Sir ARTHUR CLARKE, acted as chairman), and representatives of the medical and nursing professions, the Army and Navy, and the Colonial and Diplomatic Services.

Sir WALTER FLETCHER, secretary of the Medical Research Council, spoke on the inspiration of Sir Patrick Manson, reminding his hearers of the founding by Manson of the Seamen's Hospital Society in 1899. At that time a school of tropical medicine had been attached to the Albert Dock Hospital; twenty-one years later the coming of age of the combined hospital and school had been celebrated by their removal into the present building, which was the gift of the British Red Cross Society and the Order of St. John. Five years afterwards, the School of Tropical Medicine was incorporated with the London School of Hygiene and Tropical Medicine, now in Gower Street, but the hospital and the school continued to co-operate in their daily work by a free exchange of facilities under a common staff. The opening of the new buildings for the school had made possible the expansion and improvement of the hospital, at a cost of £13,000, by the provision of additional ward space, a new operating theatre, a range of well-equipped laboratories, and a new lecture theatre for clinical demonstrations, which would be dedicated to the memory of Manson, the father of tropical medicine in this country. The hospital, said Sir Walter Fletcher, was doing a great work in the relief of those suffering from tropical diseases, irrespective of class, creed, or colour. The patients came from all parts of the Empire, and included officers and men of the mercantile marine, planters, engineers, traders, missionaries, explorers, and servants of the State. The poor were treated free of charge, while those who could afford it paid fees in accordance with their means. The hospital also afforded opportunities for the training of medical men and nurses for service in the Tropics, and for the research work on which the hope of progress in the future was based.

A Tribute to Manson.

Sir Walter Fletcher went on to say that by the death of Sir Patrick Manson many of those present that day had lost not only a great teacher and wise adviser, but also a warm-hearted personal friend. "He died in 1922, the year after the hospital and his own school came to this building. The country lost him at a time when the growth and development of tropical medicine here had reached some difficult and critical stages. We must not dwell upon the differences it might have made to us if his guiding mind had remained to help for a few years longer. But we can find no better pattern and example than those he set before us for the work that lies so urgently at hand. What are the chief lessons he taught, not only by word, but by his life and work? He showed that the clinician dealing with disease must be prepared himself, if he is to advance knowledge, to give his own time and to acquire his own skill in pursuing his observations by the technical methods of the laboratory, and in testing his results by the method of experiment. Manson was not one of those who, while pursuing busy professional practice, complain that others are not making researches enough for their aid. Amid great difficulties abroad, isolated from other workers and from books, he made discoveries of epoch-making importance. When he came to the hard work of practice in London he still led the devoted life of the man of science, giving up time from work of immediate profit in order to read and think, observe, describe, and experiment in his own laboratory. He gave lavishly of his time to the help of younger men. He sought opportunities for them, gave them freely of his stores of experience and knowledge, and in their successes gave them generous praise and all the credit. Both by word and example he taught that a man, if he is to make new advances, must live for research, and not give it lip service only, or distant patronage. He reminded the younger worker that he must take his problems about with him always, and that he must be ready at any time or place to get the hint of a new clue to be followed or the idea of a crucial experiment to be done. This might come to him in his hot bath as easily as in the ward or the laboratory. Manson, indeed, will always have a proud place in that wonderful galaxy of medical practitioners belonging to the later Victorian age—Lister and Horsley among surgeons, Hughlings Jackson, Gowers, Ferrier, Mackenzie, and Head among physicians—who with burning zeal and self-sacrificing altruism made their professional practice the servant of their scientific work. We look round with hope that the attitude and the spirit of men like these may arise among us again in fuller degree within the present reign. We can truly apply to Patrick Manson the words that Izaak Walton wrote of John Donne: 'His mind was liberal and unwearied in the search of knowledge, with which his vigorous soul is now satisfied.'

"Never were we in greater need than now of the legacy he left us of inspiration and leadership. The gleams of knowledge we have already gained in the field of tropical medicine, or in any other field, do but show us how vast indeed are the spaces of our ignorance. We are under constant temptation to sit down satisfied with the first beginnings of new knowledge. Let me give you one instance out of many. Every schoolboy, every Cabinet Minister, knows now that malaria is due to a microscopic parasite transmitted by the mosquito. The contributions made to this chapter of medicine by the arduous work of Ross under the direct inspiration of Manson is much too often described in popular literature and in the press as if it were equivalent to the conquest of malaria. You do not conquer your enemy by merely learning who he is, how he is posted, or what his transport is. The Manson-Ross discovery was made in India a third of a century ago, yet to-day there are more, and not fewer, sufferers from malaria in India than then. Where is the conquest? What we have learned, though we have been slow enough to put it into practice, is that our campaign must be fought

by a double strategy. One part of this must be work spreading widely over many fields, of entomology and other parts of natural history, of sanitary engineering, and of social and political science. By this we may approach to control of the mosquito, but only in so far as we are patient to adapt a different strategy to each of the numerous forms of the mosquito concerned in different areas, and under each different set of environmental conditions into which the campaign is to be carried. Ask Sir Leslie Wilson here whether the fight against the mosquito and malaria in Bombay city needs the same strategy and tactics as in rural areas, or even in other cities; and ask him, too, if he considers that there has been a conquest of malaria yet in any part of India. Ask Sir Edwin Lutyens whether in the building of Delhi the architect or the mosquito has had the upper hand when it has come to a trial of strength.

The Malaria Problem.

"But besides these extensive studies there is another part of our campaign. There are other studies, of a more intensive kind, to be followed that may take us deep into the physiology of insect life, or into the biochemistry and immunology of the malaria parasite itself. It is not, perhaps, an idle dream that the true victory may come by a short cut, either the discovery of what the antennae of mosquitos actually do or what the chemical substance is that attracts them to their victims; or, again, the discovery of a perfect chemotherapy against the parasite itself. As to chemotherapy, is it not strange that, though in this year, almost in this month, we are celebrating the tercentenary of the introduction of 'Jesuits' bark' to this country, physicians continue to use quinine without knowing whether that is the best of its numerous cousins among the alkaloids of cinchona bark; and that this Empire should submit to gigantic money losses for want of gaining and using scientific knowledge in the planting and management of cinchona plantations? What I have said in relation to this one disease I might multiply indefinitely by reference to other diseases, no less destructive of life and money, out of the vast range of those that come here for study. This single example, however, is more than enough to show how strenuous is the campaign still before us.

"At the opening of these laboratories here we base our confidence for the future on the work of the past. I notice that a prominent surgeon was lately opening the new Institute at Toronto, founded to commemorate the physiological work of Banting and his colleagues that gave us insulin for the treatment of diabetes. He took occasion to belittle the work of laboratories, to declare physiologists to be aloof from medicine, and to be somnolent, and said he thought that the idea that the laboratory workers did, or could, hand over new weapons for the physicians to use was laughable. Well, in opening the new laboratories here, we need not use that Irish mode of encouragement! We know the value of the work done here hitherto, and, indeed, the workers will continue it in their zeal without much attention either to our praise or blame. The great new laboratories in the School of Hygiene and Tropical Medicine admirably allow for intensive work by distinguished men in the chief sciences serving tropical medicine, and allow, too, for its firm linkage with statistical science and the applied sciences and arts of hygiene and sanitation. Here in this building the clinicians have laboratories for their own work, and in these we see the fruitful meeting ground of workers of different equipments and different training. These two linked institutions will find their strength in a true union in ideals and in work, and, more than this, they will use well their great advantage of enjoying the friendship and close neighbourhood of University College, with all its scientific resources, of University College Hospital, which has an essential identity of interest with this hospital, and, finally, the Wellcome Bureau of Tropical Medicine, with its laboratories and museum, under the able direction of a man taught and inspired by Manson himself."

Mr. WILLIAM LUNN, M.P., expressed his pleasure at being able to see for himself the working of an institution which no Government Department responsible for the health and welfare of British men and women overseas could afford to neglect, an institution made possible by the genius of Sir Patrick Manson and the imagination of Mr. Joseph Chamberlain. Many Colonial Service officials had been treated in the hospital, and quite recently Dr. Drummond Shiels, the Under Secretary of State for the Colonies, had been a patient there. He heartily congratulated Sir Leslie Wilson on the success of his efforts in raising a Tropical Hospital Fund to defray the cost of the improvement and enlargement of the hospital; to have raised £13,000 at a time like the present was a truly remarkable result. To realize what such an institution meant to the nation, it was necessary only to remember how great was the dependence on the tropical parts of the Empire for supplies of food and raw material. Mr. Lunn then declared the new buildings open.

After the ceremony many of the guests made a tour of the wards and laboratories, and were able to appreciate the ingenuity with which the architect, Mr. Stanley Hamps, has now completed the conversion of a building originally designed as a hotel into an up-to-date hospital. Every foot of available space, from the basement to the eighth and topmost floor, has been effectively and economically utilized. The wards, with their well-appointed bathrooms and dressing rooms, provide every facility for the treatment of diseases requiring systematic observation; the provision for the comfort of the out-patients is unusually good; and the whole of the resident staff—medical, nursing, and domestic—is housed within the building. The pathological department now consists not only of a range of well-equipped laboratories, with special rooms for sterilizing and section-cutting, but also of sigmoidoscope and post-mortem theatres. The new "Manson" clinical lecture theatre is on the ground floor, and a portrait of Sir Patrick Manson occupies a place of honour on one of its walls. Here the structural arrangements are such that patients may be easily brought down from the wards in order that their cases may be made practically illustrative of the lectures.

England and Wales.

Eastman Dental Clinic at the Royal Free Hospital.

A RECEPTION was given at the Royal Free Hospital, Gray's Inn Road, London, on November 19th, when the new Eastman Dental Clinic was thrown open for the inspection of the visitors. This clinic has been erected, equipped, and endowed by the generosity of Mr. George Eastman, of Rochester, N.Y., Lord Riddell, the president of the hospital, and Sir Albert Levy, the treasurer. It is intended to serve more particularly the children resident in Finsbury, Holborn, Islington, and St. Pancras who require dental or tonsils and adenoids treatment. The planning of the clinic is on a large scale, and when one sees the sixty-eight dental chairs and electrical units one wonders where the patients are to be found to fill them. Of these chairs, fifty are placed in the main treatment room, twelve in the orthodontic department, and three in the children's and three in the adult operation rooms. The treatment room occupies the centre of the building on the first floor, from which there is access to other departments. The surgical wing contains thirty-seven beds for tonsils and adenoids cases, also for cases of cleft palate, hare-lip, and similar deformities needing surgical treatment. The other rooms include a small lecture hall, equipped with lantern and cinematograph, rooms for instruction of dental nurses, and the administrative offices.

Addressing the large and distinguished company present at the reception, the American Ambassador, General Dawes, said that this was the most complete and modern children's dental clinic ever erected. He spoke of Mr. Eastman's appreciation of the value of preventive medicine, and said that among his many scientific, professional, and humanitarian enterprises, none gave Mr. Eastman more satisfaction than the dental dispensary at Rochester, which was founded about fifteen years ago. He added that Mr. Eastman was now establishing a similar institution in Rome, and another would soon be established in Stockholm, and possibly a third in Paris. Dr. Burkhart,

who is in charge of the clinic at Rochester, read a telegram from Mr. Eastman, expressing the hope that the work to be done in the Gray's Inn Road institution for the improvement and benefit of the children of London would meet with the largest possible measure of success. Brief speeches in praise of Mr. Eastman's liberality were also made by Mr. Neville Chamberlain, who said that the clinic would stand as an example to the whole country of what a dental clinic might and should be, and by Lord Riddell, who said that the clinic would deal with children and with expectant mothers, and it was his hope that as a result of the work of prevention the children of the districts around the hospital would be spared the dental troubles which had afflicted present and past generations.

Leeds School of Medicine Dinner.

Though there were, it is understood, certain informal gatherings of the students of the old Leeds Medical School before 1878, it was in that year, and under the chairmanship of the then Dr. Clifford Allbutt, that the first of the present series of dinners was held. During the war the dinners were suspended, and the most recent one, on November 13th, was the forty-seventh of a series otherwise unbroken. The chair was taken by Mr. E. W. Bain, aural surgeon to the General Infirmary, and there were about 180 present, including a good many guests, among whom were Dr. Arthur Hawkyard, Lord Mayor of Leeds, and Mr. Henry Middleton, chairman of the Infirmary Board. Responding to the toast of "The Guests," Dr. Hawkyard, whose election as lord mayor has met with such general approval in the city and in the medical profession, remarked that he had been present at the first dinner, and that he had hardly missed any of the gatherings since. He added that he was not the first medical man to occupy the mayoral chair, as had been stated; he was indeed the first *Lord* Mayor, but in the year 1787 the great William Hey occupied what was then the mayoral chair. Other members of the profession had occupied a similar position, but there had been a long interval, for his immediate professional predecessor was Dr. James W. Wilson, ninety-four years earlier. Dr. Hawkyard referred to the great services which the members of the medical profession had been able from time to time to render to the city; among these was the provision of a fever hospital in 1804. Next year the centenary of the founding of the medical school by the second William Hey would be celebrated. The profession of Leeds is much gratified by the honour which has come to Dr. Hawkyard. It has been most deservedly bestowed, for he is not only a greatly respected and beloved medical man, but he is a product of Leeds itself and of its medical school.

The Royal Dental Hospital of London.

The Royal Dental Hospital of London invited its friends to an "At Home" on November 22nd, when cases of clinical interest illustrating the scope of the work undertaken by the hospital, especially the treatment of children and the young, were shown, and the various departments of the hospital and school were thrown open for inspection. Past students were also invited to attend demonstrations given in the morning at the Charing Cross Hospital, where the Leicester Square institution has a number of beds. In the evening the staff and past and present students dined together at the Trocadero, when Dr. Harvey Hilliard presided. After a reference to his own long association with the hospital, Dr. Hilliard said that the "Royal" was the first dental hospital to be established in this country, and it had had associated with it the names of many men who had created a high tradition in British dentistry. It was also a mother hospital, its men having started dental hospitals and schools elsewhere, and its former students held important appointments, including teaching appointments, on the staffs of many universities. He mentioned that Mr. L. E. Claremont, director of the new Eastman Dental Clinic at the Royal Free Hospital (described in another column), was an old student of the Royal Dental Hospital. Another claim which might be made for the hospital was that it was the home of dental anaesthesia. Nitrous oxide was first introduced in this country for a dental operation at Leicester Square, and the work done there had paved the way to present-day methods of intratracheal anaesthesia. Sir W. H. Goschen, chairman of the Committee of Management, replied to the toast of "The School." He referred to the giant strides made in hospital administration since the early days. Comparing old times with the present, one wondered, in view of the progress already made, to what pinnacles hospital work would presently rise. Changing as the conditions of hospital management were, there were some things in hospital life which did not change. One was the love felt for the hospital by those who had worked in it and for it; but this love of a hospital brought with it certain responsibilities, just as did family affection, and it was up to the younger members of the dental profession to see that the family name stood always as high as it had done in the past. Mr. H. Stobie, dean of the School, gave some account of staff changes, the most noteworthy being the resignation of Sir Norman Bennett, chairman of the Medical Committee. Sir Norman had given the hospital one-third of a century of service, and there was great hope that in the near future, after his presidency of the British Dental Association had expired, when he had more leisure, he would still be available in the department for the teaching of orthodontics. The Dean also announced the appointment of Dr. Harvey Hilliard as consulting anaesthetist to the hospital after thirty years' service. He referred to other encouraging developments, such as the resuscitation of the Students' Society, and the new interchange of help and ideas between British and American dentists. Mr. A. T. Pitts, in a happy speech, proposed the health of the guests. Sir John Rose Bradford, in responding, said that the members of the dental profession were fortunate in that their energies were focused and localized on a very definite entity, and they were not open to the danger which was very patent to all students and disciples of medicine—namely, that owing to the vastness of the subject and its ramifications in all manner of directions, they were tempted to stray. The Rev. A. W. Oxford, M.D., proposed the health of the chairman, and the rest of the evening was devoted to a musical programme.

Ice-cream.

In his annual report for the borough of Holborn for 1929 the medical officer of health, Dr. C. W. Hutt, refers to the provision in the London County Council (General Powers) Act, 1928, requiring the registration with the sanitary authority of premises proposed to be used for the manufacture, storage, and sale of ice-cream. The number of these premises in the borough at that date was forty-two, large quantities being manufactured in the area known as the "Italian colony." While regarding the provision as a progressive step in the control of this commodity by revealing the existence of such premises, Dr. Hutt points out, first, that no definition is given of ice-cream, and secondly, that no powers are conferred on local authorities to refuse the registration of unsuitable premises. Previous legislation on the subject is contained in the London County Council (General Powers) Act of 1902. During the year over 150 inspections were made, but no default was found to be serious enough to warrant legal proceedings. In a case in which bacteriological examination of a sample revealed more than 15 million organisms per c.cm., the maker's premises were reinspected, and he was advised to sterilize regularly all his utensils. Improvements are noted in the conditions of street sale through the increased use of grease-proof wrappings and paper cartons. Where ice-cream sold in the borough is made at premises outside Holborn, information is obtained regarding the conditions of its manufacture from the medical officer of health of the area concerned.

Central Midwives Board.

At the November meeting of the Central Midwives Board for England and Wales the point was raised that independently practising midwives had to pay ante-natal visits to patients without receiving any remuneration for this service. It was announced that the Board had no power to provide for the payment of any fees in this respect, and that the increased work involved in ante-natal supervision

should be met by an increase in the fee chargeable for attendance on pregnancy and labour. Any attempt to separate ante-natal supervision from the remainder of the services rendered by the midwives was deprecated. The Board considered the question whether three years' general training in a hospital in the British Empire outside Great Britain and Ireland should entitle a candidate to be admitted to its examination after a similarly reduced period of midwifery training. It was decided that such training within the Empire, but outside the British Isles, could only be recognized as adequate if the instruction given by the hospital had previously been officially recognized by the Board, or if the general training there would render a candidate eligible for registration by the General Nursing Council for England and Wales. The report of the Board for the year ending March 31st, 1930, was approved.

Ireland.

Tuberculosis Scheme in County Antrim.

The County Antrim County Council, on the recommendation of the Tuberculosis Committee and on the suggestion of Dr. C. O. S. Blyth Brooke, chief tuberculosis medical officer, has adopted a scheme for dealing with tuberculosis. This scheme includes the following provisions. No immediate change is to be made in institutional form of treatment, but domiciliary treatment will be practically discontinued. Patients in future will attend tuberculosis dispensaries only for examination and advice, the necessary treatment being given by the Poor Law dispensary doctor or by the patient's private doctor. Additional nourishment will continue to be given to necessitous patients, and may be extended. Provision is to be made at approved centres for facilities for *x*-ray examination of patients. The reorganization of the dispensary class of treatment is held to be absolutely necessary, in order to supervise more fully the work throughout the county. For this purpose the county will be divided into northern and southern districts. The southern district will be in charge of Dr. Ramsey, and will include the clinics of Antrim, Ballyclare, Carrickfergus, Larne, Lisburn, and Whitehouse. The northern district, under Dr. Hill, will include the following clinics: Ballycastle, Ballymena, Ballymoney, Randalstown, and Clough. The council approved of the proposal to request the Ministry of Home Affairs to allocate a part of the £19,000 in its hands to the Forster Green Hospital, to help to meet the proposed outlay in purchasing the Galwally property adjacent to the present sanatorium.

Town Planning and Hospital Sites.

In the course of an address on hospital sites and town planning, delivered at the opening of the clinical session of the Meath Hospital, Dublin, Dr. Oliver St. John Gogarty said that the public did not understand the tremendous difficulties town planning created. He did not think that town planning would assist in the location of hospitals or nursing homes, and it would not be feasible to have such institutions in a particular area. At present there was a sort of segregation; nursing homes were springing up in the south-east of the city. A corporation would be able to make by-laws for a type of dwelling to be built or converted in a particular area. It would be useful if, as in Chicago, the residents of a particular area were consulted before a building was erected in it, and that something like two-thirds of the residents should be in favour of the erection before sanction was given. Killiney, he said, was verdant with greengrocers and blooming with stockbrokers and other valetudinarians, living there because it was healthier. They kept sick people in what they called nursing homes, and all their hospitals were in the heart of the city. They encouraged invalids to come from country places or to "go into a home." Why, in face of what they knew, should patients not be given all the advantages of fresh air? Why should there not be a kind of Killiney for cripples and those afflicted not only with tuberculous bone disease, but with any kind of disease, not within the city, but within twenty minutes of it. The value of the sites of the mid-city hospitals would, if realized, suffice to pay for an equivalent building on a site more favourable to the nursing of the sick. The rateable value of the city area would be increased in direct ratio to the distance of each hospital from the town. There was no by-law to prevent anybody with a tin table in a back room from setting up a private nursing home, and nothing to prevent a professional pariah from setting up a lazar house in the centre of the city. There was no law to prevent diseased people from drinking from the public fountains in the city parks. By holding up the Greater Dublin Act until the Town Planning Bill was passed, they could regulate and direct the growth of the city with the latest scientific knowledge available, and cease to mix the dying and the diseased with the healthy in the same street.

Appointment of M.O.H. for the Borough of Limerick.

A letter was recently addressed by the Department of Local Government and Public Health to the Corporation of Limerick recommending the appointment of a whole-time medical superintendent officer of health for the city at a salary of £800 per annum. This post was rendered vacant by the death of Dr. M. S. McGrath. Consideration was given by the department to the importance to the city of problems regarding sanitation, housing, control of infectious diseases, safeguarding of food supplies, and maternity and child welfare, which have to be dealt with by the chief medical officer. The letter stated that the sanitary condition of the borough was far from satisfactory, and that the high rate of mortality from accidents of childbirth was largely due to preventable causes. The corporation decided to adhere to the previous arrangement of a part-time medical officer at a salary of £175.

Salaries of Medical Officers.

Owing to the present financial condition of the county the committee of Cork Mental Hospital has refused applications from officials for increases of salary, including an application from the resident medical superintendent for good service pay on completion of eight years' work in that position. His present salary was stated to be £800 a year with emoluments. At a recent meeting of the committee of management of the Fermanagh County Hospital it was unanimously resolved to increase Dr. Kidd's salary to £750, and to ask the county council to adopt this sum as his official salary for the future.

Scotland.

Proposed New Charter for Glasgow Royal Infirmary.

At a meeting of the court of contributors to the Glasgow Royal Infirmary, held on November 19th, it was resolved to seek a supplementary Royal Charter with a view to increasing the scope of this hospital, in consequence of the changes introduced by the Local Government (Scotland) Act, 1929. Dr. James M'Farlane, chairman of the Board of Governors, presided, and explained that the authority required referred to the powers given to local authorities to reorganize the hospital facilities at their disposal, and to provide hospital accommodation for the sick of all classes, including the sick poor. As it was in the interests of the Infirmary that these additions should be made to its Charter, he moved the adoption of a resolution in favour of presenting a petition; this resolution was carried. The powers sought to include authority to enter into agreement with the public authorities in regard to the provision of hospital accommodation, and also power to admit patients in consideration of charges made for their maintenance, accommodation, and treatment in such parts of the institution as the managers may select. Glasgow Royal Infirmary is the first of the large Royal Infirmaries in Scotland to take these steps for the admission of paying patients.

Officers' Nursing Home in Edinburgh.

The new nursing home of the Officers' Association (Scottish Branch) at Belgrave Crescent, Edinburgh, which was recently opened by the Duchess of Atholl, M.P., is intended for officers and ex-officers of the Royal Navy, the Army (including the Territorial Army), and the Royal Air Force. No charge is made for maintenance or nursing, and officer patients may engage their own medical and surgical attendants, to whom they are responsible for payment of treatment. In declaring the home open the Duchess of Atholl said that part of the work done for the sick and wounded during the South African war had been the foundation in London by the Misses Keyser of a hospital for officers, which still carried on its beneficent work. The present home was the fulfilment of a long-felt want for a similar institution in Scotland. It was often difficult for the ex-officer to adapt himself to other forms of work, or even to find other work of any kind. The Duke of Atholl, president of the home, in thanking subscribers, said that the best medical advice and nursing service would be available.

British Empire Leprosy Relief.

An address emphasizing the necessity for financial assistance in combating leprosy was delivered in Glasgow on November 7th by Dr. R. G. Cochrane. Principal R. S. Rait of Glasgow University presided, and said that leprosy was not unknown in this country, for there were actually at the present time about fifty cases in the United Kingdom—all, however, imported cases. There was reason to suppose that King Robert Bruce had died of leprosy, and the leper windows in the old churches of England and Scotland, through which the lepers watched the service, were still to be seen in some places. Dr. Cochrane referred to the fact that about seven years had passed since the inaugural meeting of the British Empire Leprosy Relief Association. Every year had opened up new opportunities, but lack of financial resources had prevented the association from taking advantage of some of them. An Indian council had been founded, and, as the result of an appeal, had secured £150,000, which was entirely expended in India. During the six years of its existence, the association had sent out at least one million doses of antileprotic remedies to workers in every part of the Empire, and had done much to publish information, which was designed to assist in a better understanding of the clinical and pathological aspects of the disease. It was tragic that in the whole of East and Central Africa there was no institution comparable to the institutions in India, where medical officers and dressers could get a training in the diagnosis and treatment of leprosy. One of the most important branches of this work was the appointment of a special full-time leprosy officer in each territory where leprosy was prevalent. Referring to a visit to the Sudan, Dr. Cochrane said that he had recommended for discharge from leper settlements over five hundred patients who had been cured. He appealed for support for the association as a scientific body, and for the generous help of the public, so that this terrible scourge might be controlled.

Central Midwives Board.

The examinations of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, have just concluded, with the following results. Out of 156 candidates who appeared for the examination, 145 passed. Of the successful candidates, 70 were trained at the Royal Maternity Hospital, Glasgow; 27 at the Royal Maternity Hospital, Edinburgh; 4 at the Maternity Hospital, Aberdeen; 7 at the Royal Infirmary, Dundee; 16 at the Elsie Inglis Memorial Hospital, Edinburgh; 2 at Stobhill General Hospital; 2 at Barshaw Hospital, Paisley; and the remainder at various recognized institutions.

Correspondence.

TEMPORARY TREATMENT WITHOUT CERTIFICATE.

SIR,—In the recent correspondence on the Mental Treatment Act, Dr. Vernon Davies points out (November 22nd, p. 886) that Section 5 as it stands means that any patient expressing "unwillingness"—in any form—will have to be certified to enter an institution; even though the "unwillingness" may be due, to a greater or lesser degree, to the impairment of the patient's judgement consequent on the form of mental disorder from which he is suffering; and even although the doctor knows that the patient's decision is biased by his mental condition at the moment.

For example, a melancholic may object to going to an institution because "there is no cure for me in any case, so that I may as well die at home"; or an early schizophrenic may object out of sheer negativism. This, to my mind, is a serious defect in the wording of the Section, for, as Dr. Dillon says (November 15th, p. 843), most of the patients whom the Act is attempting to provide for are likely to be unwilling to enter an institution, and, moreover, in such early cases the patients can usually so express themselves.

The purpose of the Act would, I think, have been better served if it had been left to the certifying practitioner to decide whether the patient's state of mind was such that his expression of "unwillingness" should be accepted. It would seem that at present cases such as the examples quoted above will still have to wait until they are bad enough to be certified.—I am, etc.,

Bradford, Nov. 23rd. H. EDELSTON, M.B., D.P.H.

AVERTIN ANAESTHESIA.

SIR,—In the correspondence on avertin anaesthesia Mr. Basil Hughes says: "With very light ether . . . infiltration anaesthesia, or spinal anaesthesia for major operations in the vicinity of the diaphragm, its use is a godsend."

A word of warning seems necessary here on two counts. Mr. Howard Jones emphasized a danger in high spinal block when reading his paper on percaine at the Royal Society of Medicine. Put briefly, it amounts to this. When most of the intercostal muscles are paralysed respiration is effected mainly by the diaphragm, and very little lung expansion takes place in the upper lobes. The result is imperfect lung ventilation, leading to anoxaemia. Anoxaemia is a cause of fatigue of the respiratory centre, with resultant shallow breathing, which increases the anoxaemia. This vicious circle can normally be broken by the inhalation of oxygen-carbon dioxide mixtures, or, more simply, by rebreathing, but if the respiratory centre is already narcotized by avertin as well as fatigued, it may not respond, and prolonged artificial respiration will be necessary. I am sure that this is the mechanism of respiratory failure in the majority of high spinal blocks where avertin or large doses of morphine have been given beforehand, and the percaine or novocain is quite unjustly blamed for producing phrenic paralysis.

The other point concerns the prolonged post-operative period with shallow breathing and diminished reflexes. I believe that this conduces to poor lung expansion and subsequent broncho-pneumonia. The following case illustrates this. A woman, aged 50, in fair condition, was to have a partial gastrectomy performed for ulcer. She was given avertin, 0.09 gram per kilo body weight, and an abdominal wall field block with 0.25 per cent. novocain and 1 in 200,000 adrenaline. The anaesthesia was perfect, and she slept throughout. It was, to quote Mr. Hughes, "a real delight to the onlookers." Her pulse rate at the end of the operation was 80, and her respirations 16 a minute. After being put back to bed she slept for twelve hours, and was drowsy for another twelve. On fully waking up she at once began to cough up muco-pus, her chest had moist rales all over, and she died on the third day from broncho-pneumonia, a condition which was verified post mortem. It is difficult to avoid the conclusion that avertin contributed to this patient's death.

If a basal narcotic is deemed necessary for high abdominal work paraldehyde would seem to be preferable to avertin, since in ordinary doses no respiratory depression occurs. For intensely nervous patients, with high basal

metabolic rates, however, avertin combined with other drugs affords an ideal combination for most extra-abdominal operations, and one must cordially agree with Mr. Basil Hughes that for such a case as partial thyroidectomy for toxic goitre a real advance in anaesthesia has been made.—I am, etc.,

London, N.W.1, Nov. 21st. C. LANGTON HEWER.

RESULTS OF TREATMENT OF CANCER.

SIR,—In a letter to the *Journal* (October 11th, p. 621) pointing out the importance of *x* rays in the treatment of cancer I used the expression that "so far, the results of *x*-ray work in the treatment of cancer have been disappointing to the surgeons." I think that few surgeons will question the accuracy of the opinion, and none have done so. This statement has had, however, an unlooked-for effect, for radiologists have taken exception to it. Two genuine letters have appeared from Drs. Russell Green and Douglas Webster. If I interpret them aright, they wish to prove that surgeons should not be dissatisfied with the results of *x*-ray treatment, but I am afraid that very great improvement must yet take place before any medical man can be content with our treatment of cancer, for the results of all forms of treatment are deplorable.

If these gentlemen wish to imply that the surgeon needs educating as to the results at present obtained by *x* rays, perhaps they are right. The course seems very simple—let us get together and prove this to the disappointed surgeons; I am only too willing to side with the radiologists in the matter, but proof is, of course, essential. With this in view I have written to the secretary of the Electro-Therapeutic Section of the Royal Society of Medicine to suggest that the Section should hold a demonstration of cancer cases treated by *x* rays. It would, of course, be far more convincing if they were treated by *x* rays alone. I would suggest showing six examples each of cancer of the breast, the tongue, the rectum, and the cervix uteri; I think we might leave out skin cases. I would not even place a three years' time limit; simply let the cases be shown. The members of the Surgical and Proctological Sections should be invited to attend. I am led to believe from the letters that this material is available. I know that statistics are not very convincing, but if statistics are used, I suggest that as we have used *x* rays long enough in his country, we should produce some of our own figures. Joint discussions on this subject have been tried with, I fear, little success, but never has a clinical evening been arranged, and if it is held it will be far more interesting and convincing.

There is no need to continue this discussion in the *Journal*. It has already wandered far from the personnel of a radium clinic; let everyone interested in the subject write to Dr. Sainsbury, the secretary of the Electro-Therapeutic Section, and offer his help. In this way we shall do something, try to prove something, and I hope carry conviction; and personalities, false quotations, and misrepresentations, which inevitably creep into medical controversy conducted by letter, will be avoided.—I am, etc.,

London, W.1, Nov. 18th. DUNCAN C. L. FITZWILLIAMS.

SIR,—In your issue of November 15th Dr. Hernaman-Johnson says: "Statistics are beginning to be available in breast cancer with regard to surgery alone." It is important that the advance of radiology should not be held up by a barrage of fallacy; therefore I call attention to two sets of statistics relating to the surgical treatment of cancer of the breast. In the April number of *Acta Radiologica* Westermark has shown the following percentages free from recurrence after five years as the result of operation by four of the best-known Swedish surgeons: Dahlgren, 15.0; Neander, 16.8; Brattstrom, 23.0 (1898–1915), 25.5 (1905–15); Nystrom, 20–23.0.

In the British Empire Cancer Campaign Committee's report for 1927 (p. 59), under the heading of "A statistical inquiry into the results of the operative treatment of cancer of the breast," the results obtained by a group of surgeons are thus stated: alive and well after 5 years, 40 per cent. Which of these sets of figures is accurate?

In the statistics quoted in the Campaign report, one fundamental fact is ignored—namely, the total number of cases operated upon. It is possible to obtain an indication of this figure for the period under review (1910–20 inclusive) as follows. The figures from three hospitals were taken as the basis for the Campaign report, which I designate Hospital A, Hospital B, and Hospital C.

	Breast Amputations.	Due to Cancer.		Period.	No. of Cases.
		Number.	Percentage.		
Hospital "A" ...	223	202	90	1910-14, 202; 1914-20, say, 2.2	404
Hospital "B" ...	During 1910-20, 478 amputations of breast were performed; applying the 90% factor from Hospital "A," the number for cancer would be, say				430
Hospital "C" ...	No figures available, but number of beds much larger than at either of the others, with a correspondingly larger staff; it can safely be assumed that the number of operations for cancer of breast during 1910-14 would be not less than the average of the other two, say ...				417
	Total				1,251

The Swedish statistics are expressed as the fraction: number of five-year healings divided by total number operated upon.

Adverting now to the Campaign report: 541 cases only are reported on because "only cases in which the presence of cancer had been proved by a microscopic examination were included in the review"; 507 cases were finally traced, of which 40 per cent. were five-year healings—that is, 203 cases—and, adopting this figure as the numerator to the previously determined denominator, we obtain the fraction 203 over 1,250, or 16 per cent.—a figure more in consonance with those of the Swedish surgeons.

The fallacy of the Campaign figures lies in the fact that evidence more weighty than histological examination has been ignored—namely, the subsequent clinical course of the large majority, terminating in death. When, as in this case, less than half the cases are examined microscopically, the effect on the report is to include automatically all those cases which are so early as to need the microscope for their diagnosis, and to exclude those cases whose character is sufficiently advanced as to need no such confirmation.—I am, etc.,

Birmingham, Nov. 19th. A. A. RUSSELL GREEN.

ANTIMALARIA MEASURES.

SIR,—The correspondence on the above subject had, I thought, ended, but the letter of Sir Malcolm Watson, published in the *Journal* of September 13th (p. 447) renders it necessary to re-state the issues.

So far as the references to myself are concerned I will confine myself to stating that the failure of Sir Malcolm Watson to take advantage, on the occasion of his visit to Lahore in 1924, of my offer to explain to him the local malaria problem and the efforts that were being made to solve it caused me no sleepless nights. It did, however, occasion surprise that a man who claimed to be an expert in malaria control should so little realize the imperfect state of scientific knowledge of malaria, and be so well satisfied with existing methods of control as to regard with disfavour any attempts to extend the scope of the one or to increase the efficacy of the other.

But to the real points at issue Sir Malcolm Watson has vouchsafed no reply. It is still not clear whether he has any practicable solution to offer of the problem presented by the control of rural malaria in the Tropics. It is true that he has told us that a knowledge of the mosquito-malaria cycle constitutes the key to the problem, but how this knowledge is to be applied on a large scale he has not attempted to explain. He claims, however, that by antilarva measures "tens of thousands of lives" have

been saved in Malaya, but to the request that he should substantiate this claim there has been no response. "Control," he states, "has spread from small towns to large towns, to estates, mines, private undertakings, and public works, villages, and many rural areas, and a great organization was created in 1926 to cover the whole country." Yet the principal medical officer of the Federated Malay States, in his last annual report, states that a study of the malaria death rate of the country as a whole during the past ten years, and of the four large towns during the past seven years, "reveals little progress in the mastery of the disease during this period."

Surely Sir Malcolm Watson owes it to science, as well as to himself, to place a detailed account of this great scheme in the hands of malariologists. So far, then, as large-scale antilarva measures in rural areas are concerned, the measure of success achieved even in Malaya would at present appear to be equivocal. And Sir Malcolm Watson has nothing else to offer. He holds that diet, housing, and economic conditions are of little or no importance, and that quininization is almost useless. If this, indeed, were a true picture of the position, there would be cause for pessimism; but fortunately this is not so. Thanks to the steadily increasing knowledge of the epidemiology of malaria, the modern malariologist realizes that the control of malaria is not solely concerned with the minor problem of "species sanitation," but that it embraces a whole series of measures designed on the one hand to enhance the powers of resistance of the community and on the other to decrease the frequency of infection. In self-governing communities, where Draconian methods are impracticable, progress on these lines must necessarily be slow, but it is on this account the more essential that unwise insistence upon any one measure and extravagant claims in regard to its value should not be allowed to obscure the issue, and to retard progress in a matter of vital importance to the well-being of millions.—I am, etc.,

C. A. GILL,
Lieut.-Colonel I.M.S.

Lahore, Oct. 27th.

SIMPLE PHLEBITIS AND EMBOLISM.

SIR,—In the *Journal* of December 1st, 1928 (p. 1010), Dr. O. Hilton, writing on this subject, concluded by saying: "It would obviously save a great deal of nursing and worry if the three weeks with bed-pans and so forth could be avoided. It would be useful if others would record their experience and give evidence which would throw light on the problem of whether there is, in fact, danger in a patient leaving his bed in such circumstances." It is in accordance with the wish expressed by him that I venture to send this letter to you in the hope that it may catch the eye of Dr. Hilton and save him further anxiety.

I would first ask, Does he inject varicose veins with any sclerosing solution. If so, does he put his patients to bed for three weeks to avoid embolism? A thrombus or clot is certainly formed in large veins in the legs, and to my mind there is just as much chance of a fatal embolism in these cases as there is in cases of simple phlebitis if a clot becomes detached; yet the medical profession as a whole allow their patients to walk about after the operation without any anxiety or worry. Has any case been recorded of embolism after an injection for varicose veins? I would next ask him why he keeps his patients in bed for three weeks—why not for six or eight? These patients often get successive thromboses, and in fact the more they are kept in bed the more a thrombus is liable to occur; so there is no limit to the time a patient may lose, and to the needless nursing and expense incurred.

It may be argued that the traumatic phlebitis caused by injection, and the phlebitis occurring without any recognizable cause, are different in their pathology and require different treatment. That the pathology is different I admit, but that in both cases it is safe to allow patients to walk about I hope to prove. The traumatic phlebitis caused by a sclerosing solution, whether salicylates, quinine, or sodium morrhuate, originates in an inflammation of the endothelium of the vein; a deposit occurs at the site of the injection, and spreads to a small extent, locally causing a hard thrombus. Thrombosis due to stagnation follows, and a large section of the vein is blocked. These clots do not cause emboli. The disease recognized as simple phlebitis or thrombo-phlebitis migrans is the result of toxaemia, either acute or chronic. Examples of acute thrombo-phlebitis are those which occur during pregnancy or after labour, in enteric fever, and post-influenzal infection or septic tonsillitis. In other cases they are usually the result of chronic auto-infection, generally due to intestinal toxaemia.

The result of researches made, and published in the *Journal* about two and a half years ago, proves that no organism is grown from the blood—in other words there is no general septicaemia, and the clot is sterile. It is on account of the result of the infection on the protein particles in the plasma that clotting or thrombosis occurs as has so often been pointed out by McDonagh. From the nature of the changed blood condition it is evident that a precipitation can occur in any vein in any part of the body, and this accounts for a thrombosis in the lung causing so-called pulmonary embolism. It is not that a clot has travelled up a vein to the right side of the heart, but a primary focus has occurred in the lung. Sometimes the affection in the lung is primary without any thrombus in the veins of the leg.

If space permitted I could quote twelve cases which I have treated (with complete and rapid recovery) during the last four years on the lines advocated by McDonagh. They have never been put to bed, and have had no embolism. The routine treatment of putting patients to bed is probably the worst possible, as it allows local stagnation and increased toxaemia due to loss of elimination. It requires some courage to depart from the shibboleths handed down from ancient times, but if Dr. Hilton is courageous enough to tell his patients to take up their beds and walk, he need have no sleepless nights wondering whether he will lose his patient or attend an inquest. The patients will be more than grateful.—I am, etc.,

W. W. JEUDWINE.

Newport, I.W., Nov. 22nd.

PARTURITION PER PERINEUM.

SIR,—I was much interested to see the illustration accompanying the case described as "Parturition per perineum," by Drs. Tindal and MacLennan in your last issue (p. 863). This is undoubtedly a case of central rupture of the perineum under an unusual title. The condition is described in *Queen Charlotte's Practice of Obstetrics* (p. 377), with an illustration on page 379. The illustration in the textbook, however, is of the lateral type of rupture.

A colleague, Dr. W. M. Sadler of Slough, fifteen years ago had a case which would undoubtedly have ended in the same way. He noticed that the perineum became very thin and blue at a point just anterior to the anus, and that the foetal head did not advance towards the vaginal orifice. He performed an episiotomy and the child was delivered per vaginam (*in extenso*)!

Drs. Tindal and MacLennan are to be congratulated on having secured a photograph of their case.—I am, etc.,

NOEL HYPHER.

Slough, Nov. 23rd.

The Services.

29TH GENERAL HOSPITAL DINNER.

THE twelfth annual reunion dinner of the medical officers of the 29th General Hospital will be held at the Trocadero, London, on Saturday, December 6th. Lieut.-Colonel S. H. Withers, C.M.G., R.A.M.C. (ret.), will preside. The honorary secretary is Captain A. Percy Groves, Heronfield, Meadow-court Road, Leicester.

DEATHS IN THE SERVICES.

Lieut.-Colonel Edward Mulvany, Bengal Medical Service (ret.), died at the Hotel Brice, Nice, on October 27th, aged 80. He was born on November 21st, 1849, the son of Mr. Michael Mulvany of Thurles, was educated at the Catholic University of Dublin, and took the L.R.C.S.I. in 1871, and the L.K.Q.C.P. in 1872. Entering the I.M.S. as assistant surgeon on March 30th, 1872, he became surgeon on July 1st, 1873, when the rank of assistant surgeon was abolished, attained the rank of surgeon lieutenant-colonel after twenty years' service, and retired on July 11th, 1892.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

The annual general meeting of the Fellows and Members of the Royal College of Surgeons was held on November 20th, the chair being taken by the President, Lord Moynihan of Leeds. About seventy Fellows and Members attended.

The President laid the annual report of the Council before the meeting, and drew attention to some of the matters reported therein. He said that the primary Fellowship examination had been again held in Canada, and next year would be held in Australia also. The first examination for the diploma in gynaecology and obstetrics had been held; there had been five candidates, of whom one had passed. Dr. E. E. Ware and Professor F. Wood Jones had been elected Fellows under Section V of the Charter. The honorary gold medal of the College had been awarded to Professor G. Elliot Smith in appreciation of his services to the Museum. The final Fellowship examination had been passed by 88 candidates, as compared with 72 last year. The Lister Memorial Lecture had been delivered by Dr. Harvey Cushing of Boston, who had at the same time unveiled a silver tablet to the memory of Sir Anthony Bowlby, erected by the medical officers of the American Expeditionary Force who had served under him in France. A sum of £4,000 had been spent on research laboratories. Thanks to the munificence of Lord Beaverbrook, Lord Melchett, and Sir Louis Baron, the College could now offer three scholarships of £500 a year each. The College, however, still required £100,000 to build and equip a surgical research institute to work in conjunction with the new laboratories, for there was at present no place in the British Empire where surgical research could be conducted.

Dr. Richard Gillbard asked what sums had been received for the Membership and Fellowship examinations during the past year.

Dr. David Roxburgh thought that the result of holding examinations in Canada and Australia must be to degrade the examination. The standard of an examination was determined not by the examiners but by the candidates. It was unreasonable to hope that the standard of teaching in Australia and Canada would approach that in London. He thought the expense of sending examiners over there would be better directed to enabling candidates to come over to London for the examination.

The President replied that the expenses of the Membership examination had been £18,085, leaving a balance of £5,692; the Fellowship expenses had been £6,736, leaving a balance of £2,325. The question of holding examinations in the Dominions had been very fully discussed by the Council, and they had decided that it would be to the advantage of the College and of surgery in general to hold examinations in Canada, provided that the right kind of examiner could be sent out and the right kind of machinery provided for the examination.

Representation of Members on the Council.

Dr. E. E. Ware moved the usual resolution in the following form:

> That this forty-second annual meeting of Fellows and Members of the Royal College of Surgeons again affirms the desirability of admitting Members, who constitute nine-tenths of the College roll, to direct representation on the Council of the College.
>
> That the result of the recent poll of Members resident in the United Kingdom and the Irish Free State (taken by the Society of Members in response to reply of the Council, December 12th, 1929), which is as follows:

Cards sent out	12,766
Cards returned undelivered	166
Cards not valid	58
In favour of representation	6,832
Against representation	156
Majority in favour	6,676
By personal canvass in favour	106

> provides indisputable evidence that this change in the constitution of the College is desired by a very considerable number of the Members of the College.

He remarked on the antiquity of the form of resolution, and ascribed this to the fact that it expressed a just claim which appealed to all who could think logically. Only recently had it been passed with a feeling of good will and amity, but there was no reason for rancour; it was simply a matter of difference of opinion. The President had said last year that there was no evidence that this measure was desired by more than a few members. Since then several favourable references had been made to the proposal by the Council, the Hunterian Orator, and the journals. The funds collected had not been sufficient to take a poll of all the Members; only practising doctors with permanent addresses had been circularized. Of the seven thousand who had sent valid replies, only 156 were against the necessary change in the Charter. It was proposed that a certain number of Members only, elected by Members alone, should be added to the Council. These figures offered indisputable evidence that the change was desired by a large number of Members.

The resolution was seconded by Mr. Windham L. Gillbard, who said he was astonished to find that this proposal had been before the Council for so long, although no convincing reasons had been adduced for its rejection. On this matter 55 per cent. of those addressed had voted—a remarkably high figure for a postal vote among doctors. This showed that the Members were more interested in the management of the College than the Fellows. Fellows abroad showed great interest in the College, and it was reasonable to suppose that Members abroad would also show this interest. It was not good for the College that its Members should regard it as an examination machine with a museum somewhere in the neighbourhood of Lincoln's Inn Fields.

Dr. F. W. Collingwood said that the rank and file of the medical profession did a great national work. These general practitioners should have a status of which they were not ashamed. Dr. Haydon also supported the motion.

Mr. McAdam Eccles asked whether the voting card was accompanied by a letter, what wording had been used, and whether it had been stamped. (A copy of the card and circular was handed in.)

Dr. Wilson Parry said that from the legal point of view the Members had no case, but the law had its limitations. He appealed to a tribunal respected and revered by every medical man—the system of ethics embodied in the Hippocratic oath—and the basis of this system was ethical justice. Mr. Howard Stratford suggested that it would be pleasant if the visitors to London from all over the world on the occasion of the Centenary Meeting of the British Medical Association in 1932 could learn that Members had been given a part in the management of the College. Dr. Richard Gillbard said that the atmosphere was very different from that of former meetings. Members were hopeful, and he trusted that this meeting would not come to an end resembling that of the last chapter of Rasselas—"a conclusion wherein nothing is concluded." Dr. Kite said that there was no personal feeling; this was a matter of principle.

The President said that the resolution had never been submitted by such temperate, eloquent, and fair-minded speeches as on this occasion. The Council regarded this as a matter for most anxious consideration, and it had never been decided with ill will or disregard. In view of the figures submitted by Dr. Ware, the Council had decided to hold a special meeting in committee before the next full meeting to discuss this matter *de novo*. (Applause.)

The motion was carried by 43 votes to 1.

UNIVERSITY OF OXFORD.

At a congregation held on November 22nd the following medical degrees were conferred:

D.M.—T. C. Hunt, O. R. Tisdall.

B.M.—J. N. O'Reilly.

UNIVERSITY OF LONDON.

Lectures in the History of Medicine.

Two lectures, illustrated by lantern slides, will be delivered at University College Hospital Medical School, University Street, W.C., by Dr. Charles Singer, on Mondays, December 1st and 8th, at 4.15 p.m. The subject of the first is the "Fourth centenary of the invention of the word 'syphilis,'" and of the second "The eighteenth centenary of the birth of Galen." The lectures are open to all medical students of the University of London.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have passed in the subjects indicated:

Surgery.—E. Jacomb, L. A. Riddell, W. K. Schnarr.

Medicine.—R. P. Davies, L. A. Riddell, W. K. Schnarr.

Forensic Medicine, Hygiene, and Insanity.—G. W. Hinchliff, H. G. Hind, W. A. Naidu, W. W. Parry, L. A. Riddell, L. Sachs, S. H. Thaler.

Midwifery.—S. J. Bellgard, G. I. Benjamin, C. L. Fergusson, W. G. Kingston, E. H. W. Lyle, M. S. Mules, H. C. Pain.

The diploma of the Society has been granted to Messrs. R. P. Davies and E. H. W. Lyle.

Obituary.

DAME MARY SCHARLIEB, D.B.E., LL.D., M.D., M.S.,

Consulting Physician for Diseases of Women, Royal Free Hospital.

Dame Mary Scharlieb (née Mary Ann Dacomb Bird) was born on June 18th, 1845, near London, and her mother died ten days later. The care of this delicate baby devolved upon the maternal grandparents, but after some years her father married again, and it was owing to the stepmother's influence that she received an education that was unusually good for the time. At the age of 10 she was sent to a boarding school in Manchester, and while there wrote a story about a child in India. This was permitted as a substitute for the daily "copy," and was her second flight, as she had already written a thrilling and tragic tale at the age of 5. Her health being somewhat unsatisfactory, she was moved to a school at New Brighton, where she revelled in nature studies and collected seaweeds and zoophytes. The third educational venture was to a school in St. John's Wood, where she entered enthusiastically into the science, language, and literature lessons, besides making progress in music under the tuition of her beloved cousin Henry Bird. She was fond of riding, but never joined in games, and detested dances and parties. Before she was 20 she had met Mr. Scharlieb, who was visiting friends in England and "eating his dinners" at the Middle Temple, preparatory to being called to the Bar. The attraction was mutual, and in spite of objections from all her relations she coaxed her father round. They were married on December 19th, 1865, and soon after sailed for Madras. At the end of 1866 her first son was born, and two other children followed in 1868 and 1870.

Mary Scharlieb

Twelve years were spent in the ordinary routine of domestic cares and duties, combating ill-health in a tropical climate and oftentimes uncongenial surroundings. She helped her husband in the publication of two law journals, and in his work as an examiner. It fell to her lot to review Sir Joseph Fayrer's *Medical Jurisprudence*, and this first aroused her interest in medicine. There came to her knowledge also, through her husband's clients and clerks, many cases of suffering among Hindu and Mohammedan women, and she became convinced of the necessity of women being qualified to attend on them. So she obtained permission to enter the Madras Lying-in Hospital for a year's training. This she found was not enough, and after much delay and opposition she entered the Madras Medical College with three other women. They shared the instruction with the men who were preparing to be surgeons in military and civil employ, and at the end of three years all received the licenciate in medicine, surgery, and midwifery. But the hard work involved had so told on her health that a return to England was inevitable. It was also necessary to take the children home for the sake of their health and education.

The voyage home was a nightmare of horror. The ship ran out of coal four times, but in spite of peril, illness (aggravated by the smell of the oilseed cargo), and the supervision of the children, she ensconced herself in a recess of the saloon with back to the wall and feet firmly planted against the side of the chimney, and fought nausea and mathematical riddles at the same time, and thus prepared for an entry as expeditious as possible to the London Matriculation. Letters of introduction to Mrs. Garrett Anderson, Sir Henry Acland, Florence Nightingale, and others were presented, and she entered the School of Medicine for Women, passing the Preliminary Scientific in 1879. In 1880 she began work in the wards of the Royal Free Hospital, and took the final M.B. the following year, gaining the gold medal and scholarship in obstetrics. In January, 1883, she decided to go to Vienna to obtain practice in operative midwifery, and again her perseverance and determination overcame all obstacles, and she obtained real dexterity in this branch of surgery. She attended clinics for diseases of the ear and eye, "scorning delights and living laborious days." At the end of two months she met her husband in Italy, and together they returned to England. Then followed audiences with Queen Victoria and the Prince and Princess of Wales. Queen Victoria insisted on hearing all details of the difficulties and sufferings of the caste and gosha women. She listened with the greatest interest, and said: "How can they tell me that there is no need for medical women in India?" She then gave her a message for her future patients: "Tell them how deeply their Queen sympathizes with them, and how glad she is that they should have medical women to help them in their time of need."

On her return to Madras in July, 1883, she started work as a general practitioner, but soon realized the absolute necessity of a hospital, not only for the poorer patients, but for those of good family, whose households included no one capable of carrying out instructions. As for colleagues, there was no one nearer than Bombay, so she taught her sister to administer anaesthetics and her maid to assist to the best of her ability. The Government soon came round to a realization of the necessity for a hospital, and this materialized as the Royal Victoria Hospital for Caste and Gosha Women. Her day's work at this time began at 5.30 a.m., and continued till the dinner hour at 8 p.m. Then sleep and bed, if possible, but that was frequently interrupted by night calls, and the most trying part was that, no matter how ill or over-fatigued she might be, she felt she could not rest without causing damage, not only to individual patients, but to the work she had set out to do—namely, the teaching of the women of the country to rely on and to use the help that Western

medical knowledge could give them. Fortunately an assistant was soon forthcoming, and then she was able to accept the post offered of lecturer on midwifery, gynaecology, and diseases of children at the Madras Medical College. She was also appointed examiner in obstetrics and gynaecology to the University of Madras.

In February, 1887, she left Madras, never to return. She had built up a good practice, earning about £2,000 a year, but heavy expenses had made saving impossible, and now she was faced with the double problem of failing health and the urgent need to earn in order to redeem liabilities undertaken in days of prosperity. Mrs. Garrett Anderson received her kindly, and put a certain amount of work in her way. She became joint lecturer on medical jurisprudence to the School of Medicine for Women, and also physician to out-patients at the New Hospital for Women, then in its very early days. In February, 1888, she was appointed clinical assistant to Mrs. Garrett Anderson, and later was elected president of the University of London Women Graduates' Association. In December she obtained the M.D. degree of London, being the first woman to secure it. The following year she accepted the lectureship on the diseases of women at the School of Medicine. In 1890 Mr. Scharlieb returned to England, but two months later he succumbed to influenza and pneumonia, and died on January 4th, 1891.

The period between 1891 and 1902 represents a sort of tableland. She had as large a practice as she could manage. She was a hospital surgeon and lecturer at the school, and had various outside appointments. She was medical referee for most of the big missionary societies whose headquarters are in London, lecturer to the Queen's Nurses and other institutions, as well as examiner to women candidates for the Civil Service. A landmark during this period was her achieving the degree of Master of Surgery in 1897. In 1902 came the appointment as gynaecologist to the Royal Free Hospital, which made her the first women to hold a staff appointment in a London general hospital. The lectureship on midwifery was also added to that already held at the School of Medicine for Women, and this post she retained until 1908.

The next ten years brought but little change in the record of professional life. Several books were published, a bad attack of appendicitis weathered, and delightful holidays abroad are recorded. In 1910 she was president of the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, having served as vice-president in 1900. In 1913 she was appointed to serve on the Royal Commission on Venereal Diseases, and with other members of the committee joined the newly formed National Council for Combating Venereal Diseases. She was also a member of the Commission on the National Birth Rate, which began its sittings in 1913, and presented its first report in 1916 and its second in 1920. During the war her health forbade her accepting the offer of the charge of one of the women's hospitals in Belgium, but she did a great deal of voluntary work, serving on the Council of War Relief for the Professional Classes, attending the patients in the maternity hospital, and lecturing on venereal diseases and rescue and preventive work.

In August, 1917, the King conferred on her the honour of the C.B.E., and in the same year she was elected to the presidency of the London (Royal Free Hospital) School of Medicine for Women. In 1924 she presided at its jubilee dinner at the Guildhall. For many years she was Deputy Chairman of Convocation, and until her death she represented medical graduates on the Standing Committee of London University. The Royal Institute of Public Health held a congress in Brussels in 1920, and she was president of the Women's Section. She was appointed one of the first women magistrates, serving in the juvenile court under Mr. Campbell Grahame. She was also one of the Commissioners in Lunacy at Marylebone, and one of the visiting magistrates at Holloway Prison. In 1926 she was created Dame of the British Empire, and two years later the University of Edinburgh conferred on her the honorary degree of LL.D. Two notable papers read by her must not be forgotten: the Norman Kerr Lecture delivered before the Society for the Study of Inebriety in 1919, and one on "The family: the spirit in the Christian home," contributed to the Anglo-Catholic Congress in 1923, when her clear voice and perfect diction could be easily heard all over the Albert Hall. The last three years of her life were spent in the house of her son, who is senior anaesthetist at University College Hospital.

Dame Mary Scharlieb's personality was no less remarkable than her life story. Her appearance was characteristic and unforgettable, with her upright carriage, her hair still dressed in the fashion in which she wore it in the days of Queen Victoria, her bonnet now almost a relic, even for old ladies, and her wonderful hazel eyes full of intelligence, which never lost their youthful sparkle up to the last days of her illness. Almost to the day of her death her mind remained clear and active, and her will power was as strong as it had ever been. It was that perhaps more than any of her other remarkable qualities which made her what she was, enabling her to overcome difficulties which any other man or woman would have found insurmountable. Her energy was inexhaustible. Her usual hour for operating was 8 a.m., the beginning of a day which seldom ended before 10 p.m. She was extraordinarily versatile, her interests ranging from women's welfare and journalism to domestic affairs and surgery. She was performing major operations two years ago, and kept herself absolutely up to date, worked with amazing rapidity, sometimes making it difficult for her assistants to keep pace with her. All new movements for social progress had her active support. She was interested in all that made for the betterment of her fellow creatures, especially of women.

She was a woman of deep religious convictions, untouched by modern scepticism. Her sense of humour never failed, nor was she ever at a loss for an apt quotation or a quick repartee. Through her profound knowledge of human nature there ran a deep vein of sound common sense, which well equipped her for dealing with the mental as well as the physical difficulties of her patients. Even up to the day of her death patients were wanting to consult her, scarcely believing it possible that she could no longer be accessible to them. Patients and friends alike can hardly realize that her indomitable personality has gone. Hers is a spirit that has left its mark in a world of suffering humanity in a way that she herself would have wished. A favourite quotation of hers may fitly close this memoir, contributed by three friends:

"The day is long and the task is great, the reward also is great and the Master presseth. It is not incumbent on thee to finish thy work, but thou must not cease from it."

We are indebted to Sir Thomas Barlow, Bt., for the following appreciation.

During what may be called the middle period of the struggle for the medical education and recognition of women, the Children's Hospital in Great Ormond Street gave facilities to women students to attend the clinical work of the hospital. I have a vivid recollection of Mrs. Scharlieb's first attendance at my clinic more than forty years ago along with some of her fellow students. She had gone through a medical course at Madras, supplemented by a fair amount of practical work, and had come to England for further medical education with the determination to obtain the best qualifications then open to her. I was very soon convinced that she was no tyro in methods of physical examination, and by and by I realized that she was a person of decision and purposefulness. She was at that time working for the final examination of the M.B. degree of the University of London. She took her degree, gaining the gold medal in obstetrics and honours in other subjects. She broadened her knowledge of gynaecology by a course of study at Vienna, and ultimately obtained the London M.D. and M.S. She then returned to India and gave herself up to hospital work on behalf of poor and outcast Indian women. Hard work led to some failure of health, and eventually she returned to England and entered on private practice in London, devoting herself largely to operative gynaecology. I am assured by those whom I can trust that she gained considerable manipulative facility, and she certainly obtained very good results. From this time for a while I saw little

of her, but I could not fail to admire her tenacity in pleading for freedom of opportunity for women in medical education. She had not only courage and singleness of purpose, but moral fervour in her many undertakings. She spoke with no uncertain sound about alcoholism and medical missions. She was appointed a member of the Government Commission on Venereal Diseases, and for many years she was a working member of the committee for combating those diseases, especially during the war. In spite of her pioneer spirit, Mrs. Scharlieb could not be described as an aggressive personality. She was courteous, tolerant, and reasonable. She was distinguished by her readiness and sympathy, and she had a way of inspiring patients with her cheerful and buoyant courage. I can bear witness that as a colleague she was loyal, fair, and generous. She lived to a good old age, and her distinguished career received proper recognition. She rejoiced in the love and attachment of her children, and in the warm friendship of her fellow workers, and they will remember her as a woman of great attainment, of noble purpose, and of singular courage and devotion to principle.

Dr. Jane Walker writes:

It is perhaps fitting that Dame Mary Scharlieb's oldest living friend among the woman doctors should endeavour to give the readers of the *British Medical Journal* some idea of her. I first made her acquaintance in the spring of 1880. She had recently come from India to put her three children to school in this country, and to pursue her medical studies with a view to obtaining an English degree. The Senate of the London University, under the able chancellorship of Lord Granville, had opened the doors of all its examinations to women, and accordingly Mrs. Scharlieb decided to work for the London M.B. Another woman, Miss Edith Shove, was in much the same position; both had some years of medical study behind them, and were really in a position to sit for the first M.B. examination. They applied to be excused from the matriculation and the preliminary scientific examinations, and their application was granted. I believe I am right in saying that this permission was coupled with the *sine qua non* that they should both pass an examination in Latin for their final M.B.! The successes of both these ladies were brilliant and outstanding, and perhaps it is largely owing to their example that the students of the London School of Medicine for Women have always been very numerous in the lists of the medical and surgical examinations at the London University. Mrs. Scharlieb was a very brilliant student, both at the school and at the Royal Free Hospital, which had opened its doors to women students of medicine at about the same date as the London University. She and I saw a great deal of one another, although I was at the school and she at the hospital. For one thing, I could get off more easily than she could, and as she had her children on her hands, I and her other three great friends at the school and hospital—Julia Cock, Constance Hitchcock, or Helen Prideaux—used to help her with them by seeing them across London to their schools and in other ways. Another reason was that she was in-patient clerk to Dr. Buchanan Baxter, and I was his out-patient clerk. We both regarded ourselves as among the luckiest people in the world, for he was a truly great man and a magnificent physician. Mrs. Scharlieb returned to India in 1883 and practised in Madras, where she was lecturer in midwifery and gynaecology in Madras Medical College, and examiner. She was also medical superintendent to the Hospital for Caste and Gosha Women. But she had never been strong, and the climate of Madras, together with the hard work of a big practice, made it impossible for her to continue in India, and so she returned to London in 1887 to that house at the top end of Harley Street which she shared at first with Professor Schafer, another of our very great and dear friends at the School of Medicine, and where her numerous friends, both medical and lay, and an ever-increasing number of patients, knew her till 1924, when the house was pulled down. All her friends were welcome; she was the soul of hospitality and of unbounded generosity, and she gave in all ways of her substance far beyond the traditional tithe.

Several obituary notices have called her a pioneer. In my opinion this is an incorrect description of her. Rather did she become a woman doctor to enable her to help the sufferings of her fellow women. In no sense did she attempt to blaze the trail for medical women coming after. She was a most beautiful operator, but it was all done in such a quiet, modest, unassuming, almost commonplace manner that it seemed, even at the very beginning, to be the most ordinary thing in the world for a woman to be doing big abdominal surgery. It is, of course, true that delicacy of touch and the smallest of hands, as well as knowledge and practice of needlework, were a great asset—(whoever has seen Mrs. Scharlieb quietly knitting at a committee of both men and women could doubt that?)—but she had never had an operating knife in her hand till she was turned 40 years of age, and yet very soon she became one of the six great abdominal surgeons of the world. That, I think, makes her almost of the nature of a phenomenon. She brought ordinary common sense and naturalness to all she did. She had no peculiarity; she dressed just like other people at a time when all sorts of extravagances were being used in a serious attempt to help "the Cause." All this was of inestimable value at that time in the women's movement. Indeed, I should not call her a feminist, at any rate not in the really modern use of the term. She helped the women's movement in what is perhaps the really best way, by the excellence of her work. It was not until the latter part of her life that she became a keen suffragist, and she was greatly disturbed by what she felt were the excesses of the militants. In spite of Mrs. Scharlieb's delicacy of constitution, she was a tremendous worker, although always in a very orderly and methodical way. She was invariably up to time—you could set your watch by her movements—and she never hurried. Her habits and tastes were of the simplest; her own personal requirements very small; her own meals of the frugalest, some would have said sparse; and ten o'clock at night always found her preparing for bed—usually in her bath. Even there she was at work, for she did her meditation there!

No notice of Mary Scharlieb would be complete without some reference to her religious faith, for it dominated her whole life. She was a consistent practising High Churchwoman, and a member of the Church of St. Mary Magdalene, Munster Square, during the whole time she lived in London.

Dr. Louisa Garrett Anderson writes:

The name of Mary Scharlieb holds an honoured place among medical women, and her passing marks the end of an epoch. Mrs. Scharlieb followed the early pioneers such as Sophia Jex-Blake, Edith Pechey Phipson, and my mother, but although their junior, she was sufficiently near them in age to share many of their labours, responsibilities, and difficulties. She was a loyal and devoted colleague, and to her, more than to any other woman, is due the credit of establishing a high standard of surgical work among women practitioners. In 1885, during my mother's absence in Australia, Mrs. Scharlieb took charge of the Women's Hospital, which was situated then in the Marylebone Road. When the hospital enlarged and removed to Euston Road she became senior surgeon, a post she held with distinction for many years. She was a courageous and successful surgeon, and her manipulative skill was great. Her surgical reputation was an immense asset to the medical women's movement, especially in its early days, when inability to deal with important gynaecological surgery would have been disastrous. Mrs. Scharlieb's association with my mother was a very happy one. In most respects very dissimilar, they were good friends and excellent colleagues. Mrs. Scharlieb's generosity and genuine kindness won intense devotion from her patients of all classes. To the world the name of Mary Scharlieb is better known than that of any other medical woman; it has been familiar for half a century. Medical women are proud of all she did and of the record of her life. She has left them an example of splendid professional and public service.

[The photograph reproduced is by Elliott and Fry.]

G. H. K. MACALISTER, M.D.,

Principal and Professor of Clinical Medicine, Singapore Medical College.

WE regret to record the death of Dr. George Hugh Kidd Macalister, who died in London on November 2nd, after a long illness. The son of Alexander Macalister, professor of anatomy at Cambridge, Hugh Macalister was born in Dublin in 1879, where his father held the chair of anatomy at that time. After an early education at the Perse School, Cambridge, and at Bonn, he obtained a scholarship at Charterhouse, and afterwards at St. John's College, Cambridge; thence he went to Guy's Hospital, and, graduating M.B., B.Ch. in 1906, he held several resident appointments. His inclinations, however, led him to the laboratory rather than to practice, and, taking the M.D. and D.P.H. in 1909, he served in succession as assistant bacteriologist at Guy's Hospital, the Lister Institute, and the Wellcome Research Laboratories. Whilst holding the latter post the death of his first wife struck him so deep a blow that he decided to leave England, and in 1914 he went out to India as pathologist to the Imperial Bacteriological Laboratory at Muktesar. There he spent much time in field work, and published a monograph on kumri; but the war interrupted his work, and in 1916 he went to Baghdad with a temporary commission in the Indian Medical Service, and took charge of a large pathological laboratory. In 1917 he received an offer from the Colonial Office to go to Singapore as principal of King Edward VII Medical School. This gave him the opportunity he wanted, and in 1918 he took up the post that was to provide him with the outstanding work of his life. The steady progress of the school, now the College of Medicine, under his guidance, and the replacement of the old building by the impressive structure of to-day, are an enduring monument to the patient care, the skilful administration, and the tactful enthusiasm with which he tended its growth. In addition to his work as principal he also held the chair of clinical medicine, and he entered into many activities in medical life; he was president of the Malaya Branch of the British Medical Association, and secretary of the Straits Settlements and Federated Malay States Medical Council. Yet it will not be for his official activities so much as for the high ideals which he inspired that he will be remembered and honoured for many a year throughout Malaya. In 1927, during a period of leave, he was Government representative at the League of Nations Conference on Rabies in Paris, and later he went to Sierra Leone as a commissioner to advise on subordinate medical education; in this year also he was elected a member of the Royal College of Physicians.

Quiet and reserved by nature, Hugh Macalister seemed, perhaps, to the casual observer to be somewhat difficult of approach; but when once the ice was broken there lay revealed a depth and tenderness of affection that made him the rarest of friends. No account of his life would be complete without some reference to his second marriage, which took place in Bombay just before he set out for Singapore, for this alone made possible the success that he achieved. No longer did he picture himself an exile; his home went with him, and from it there radiated a happiness that not only made his own life complete, but also contributed in large measure to a beneficent influence that spread throughout Malaya. The sympathy of a wide circle of friends will go out to Mrs. Macalister and her children at his early death.

DR. EDWIN GABRIEL HARRIS, who died on November 5th, at the early age of 38, received his medical education at the London Hospital, and obtained the diplomas M.R.C.S., L.R.C.P. in 1917, having served as surgeon probationer in the Navy during the earlier part of the war. After qualifying he held the posts of house-physician, house-surgeon, resident anaesthetist, and clinical assistant in the aural and genito-urinary departments of the London Hospital. He had also made a special study of ophthalmology, and was clinical assistant in the ophthalmological department of the London Hospital, and refractionist at the Peckham Treatment Centre of the London County Council. Dr. Harris was a Fellow of the Hunterian Society, and a member of the British Medical Association and of the New Cross Medical Society. In 1922 he joined Dr. R. Tilbury in practice in Peckham, and won widespread popularity by reason of his conscientious work and great capacity for friendship. He leaves a widow and an infant son.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has been in committee on the Education (School Attendance) Bill. Sir Charles Trevelyan announced that the Government would propose that the operation of the measure should be postponed till September, 1932. A debate on the recent Imperial Conference arose on November 27th.

On November 25th the Parliamentary Medical Committee was addressed by Dr. Blacker and Dr. Langdon Brown of the Eugenics Education Society, on voluntary sterilization of the unfit. A discussion followed, and questions were asked, but no resolution was proposed. The Medical Committee authorized Dr. Salter and Mr. Somerville Hastings to see Mr. Greenwood on the proposal to establish a consultative committee on rheumatism.

The Socialist Medical Association met at the House of Commons on November 19th, and decided that it would offer to collaborate with any other association having similar aims. The National Medical Service Association issued, on November 25th, its observations on the British Medical Association's proposals for a General Medical Service for the Nation.

Regulations under the Mental Treatment Act have been circulated by the Ministry of Health to local authorities, and are to lie on the table of the House of Commons, probably after the Christmas recess. Their acceptance is anticipated by the Government, which regards them as being merely consolidatory.

After-career of Mentally Defective Children.

Mr. MORGAN JONES, replying to Major Church on November 24th, said that the Board of Education urged all local education authorities which provided schools for mentally defective children to compile records of the after-careers of children who had left, so far as they were able. Nearly all authorities did so, but they were not in a position to ensure that those records were complete. An analysis of the records for seven areas would be found in Para. 88 of the report of the Board's chief medical officer for 1925.

Bellahouston Hospital.

Replying to Mr. McLean, on November 20th, Mr. ROBERTS said repeated intimations had been received from the Glasgow Corporation that the site of Bellahouston Hospital was required for civic purposes, and, though they had extended the Ministry of Pensions' occupation on several occasions, it was decided that existing requirements did not justify further occupation beyond January next. He was satisfied that Erskine House was entirely suitable as alternative accommodation for the treatment of ex-service men in the West of Scotland, and saw no ground for altering this decision. Erskine House was not a Ministry of Pensions hospital, but was controlled by a governing body of Glasgow citizens, with which the Ministry had for many years had an arrangement on a capitation basis for the care and treatment of medical and surgical cases arising from war disability. He was unaware of any departure from the purpose for which the hospital was established. Ministry patients had been treated in this hospital for years past. The number of beds at present available for the Ministry at Erskine House was sixty-three. During the years 1925–29 limbless and other surgical cases were treated in the Ministry of Pensions surgical centre at Bellahouston, which would shortly be transferred, under the present surgical control, to Erskine House. The number of equipped beds in Bellahouston was seventy-two, and the numbers of in-patients treated during the years 1925 to 1930 were respectively: 277, 226, 167, 129, 101, and 93. About 300 out-patients commenced a course of treatment during 1925, and about 100 during the early months of 1926. Since 1926 the out-patient branch of the work had been transferred to Sauchiehall Street, Glasgow, where it was at present, and would henceforth be conducted.

Bodies for Dissection.

Mr. GREENWOOD stated, in reply to Mr. Day on November 20th, that his attention had been drawn to the fact that the public assistance committees of several counties had decided that

in future bodies of friendless paupers were to be available for dissection at medical schools, but arrangements were made by the authorities that when the dissected body was buried the remains of the body would be properly interred. Any inmate of an institution might express a desire that his body should be interred without anatomical examination, and Section 7 of the Anatomy Act, 1832, provided that such a wish would be respected.

Tuberculosis on Tyneside.—In reply to Mr. Ede, on November 20th, Mr. GREENWOOD stated he was in communication with the authorities of South Shields concerning the prevalence of tuberculosis in that borough. He had made suggestions for increasing the hospital provision available for treatment of tuberculosis on Tyneside. If local authorities desired a conference with a view to a centralized and comprehensive scheme, he would be glad to do anything to facilitate it.

Death Certification in absentia.—Mr. GREENWOOD said, in answer to a question on November 20th, that his attention had not previously been drawn to a statement by the Southwark coroner to the effect that there were thousands of doctors who would certify death without seeing the body of the deceased. As the subject was fully discussed during the passage of the Births and Deaths Registration Act of 1926, he did not see sufficient reason to introduce legislation making it imperative for doctors to see the deceased persons before death certificates were issued.

Advertisements in Medical Periodicals.—Replying to Mr. Freeman on November 20th, Mr. GREENWOOD said he was unaware of any ground for proposing to extend, by amending the Medical Act of 1886, the control which he understood was already exercised over advertisements of drugs by the proprietors of medical journals.

Suicides.—Mr. SHORT told Mr. Kinley, on November 20th, that the number of suicides in England and Wales in the years 1920 to 1929 were respectively: 3,373, 3,715, 3,844, 3,919, 3,679, 4,054, 4,408, 4,863, 4,846, and 4,907.

Absinthe.—Mr. SHORT said, in reply to Major Owen on November 20th, that he was not prepared to introduce legislation forbidding the manufacture, sale, and use of absinthe in this country.

Poisoning by Lead Paint.—Replying to Mr. White on November 20th, Mr. SHORT said that, since the new regulations under the Lead Paint Act came into force on October 1st, 1927, there had been 87 cases reported, including 20 deaths, in 1928; 75 cases, including 10 deaths, during 1929; and during the nine months ended in September, 43 cases, including 9 deaths. The regulations were constantly under review, having regard to the facts in cases brought to notice.

Experiments on Animals.—Replying to Mr. Freeman on November 19th, Mr. SHORT said the cost of keeping a record of the number of animals involved on the basis of the 403,141 experiments for purposes of vivisection performed last year would depend on the amount of detail required to be collected and tabulated and the degree of completeness to be attained in the collection. Additional clerical assistance would be needed in any case, and the inspectors would have to give a certain amount of the time which at present was available for "inspection."

Mental Treatment.—Replying to Mr. Kinley on November 20th, Mr. GREENWOOD said that the method of treatment of patients in public mental hospitals was not laid down by the Board of Control, but was within the discretion of the medical officer of an institution.

Asylum Officers' Superannuation.—On November 20th, replying to Mr. Ramsbotham, Mr. GREENWOOD said the decision to set up an actuarial investigation into the Asylum Officers' Superannuation Act of 1909 was taken in September, 1929, and the intervening period had been occupied by the collection of necessary data from the institutions concerned. The returns received were before the Government actuary, who would carry out the investigation as quickly as possible. This would occupy a considerable period, and it was not practicable to fix a date for its completion.

Medical News.

DR. T. WATTS EDEN has been appointed chairman of the directors of the *Journal of Obstetrics and Gynaecology of the British Empire*, in succession to the late Sir Francis Champneys.

THE annual dinner of the Medico-Legal Society will be held, under the presidency of Lord Riddell, at the Holborn Restaurant on Friday, December 12th, at 7.15 p.m. The honorary secretary is Mr. Ernest Goddard, 3, South Square, Gray's Inn, W.C.1.

THE Irish Medical Schools' and Graduates' Association will hold its annual London dinner in the Georgian suite, Piccadilly Hotel, W., on Thursday, December 4th, at 7.45 p.m. The president, Dr. W. Player Kennedy, will take the chair, and the guest of the association will be Lieut.-Colonel Sir Frank O'Connor. Tickets (price 15s., exclusive of wines) can be had from Mr. James Carver, F.R.C.S., St. George-in-the-East Hospital. The dinner will be preceded by a general meeting of the association at 7.15 p.m.

THE winter dinner of the Australian and New Zealand Medical Association in England will be held at the Trocadero Restaurant on Friday, December 12th, at 8 p.m. Mr. T. P. Dunhill will preside, and the High Commissioner for Australia will be the official guest. All medical visitors from Australia and New Zealand, whether members of the Association or not, are invited to be present. The honorary secretaries are Mr. E. T. C. Milligan and Mr. Philip J. Jory, 26, Queen Anne Street, W.1.

THE annual dinner of the Yorkshire Association of Graduates of the University of Glasgow will be held in the Great Northern Hotel, Leeds, on Friday, December 5th, at 7.30 p.m. The guest of the evening will be Dr. Sam J. Cameron of Glasgow. Any graduates of the University resident in Yorkshire who desire to attend should apply to the honorary secretary, Dr. Wm. McAdam, 40, Park Square, Leeds.

THE National Institute of Industrial Psychology will hold a meeting on Thursday, December 11th, at 6 p.m., at the London School of Economics, Houghton Street, Aldwych, W.C., when addresses will be given by Dr. W. J. Pinard on tests of character, and by Mr. C. B. Fox on industrial psychology applied to the blind. The chair will be taken by Sir Richard Paget, Bt.

PARTICULARS of the lectures and demonstrations arranged for next week by the Fellowship of Medicine will be found in our Diary of Post-graduate Courses published in the *Supplement* at page 244. Copies of syllabuses and tickets of admission can be obtained from the Fellowship, 1, Wimpole Street, W.1. The list of special courses arranged for 1931 is now available.

THE text of Lord Moynihan's Listerian Oration, delivered at Winnipeg on August 29th, under the auspices of the Lister Memorial Club of the Canadian Medical Association, has now been reprinted, together with Dr. John Stewart's introductory speech, from the *Canadian Medical Association Journal*. The pamphlet has as frontispiece a portrait group, taken at Winnipeg, of Lord Lister's three house-surgeons—Dr. John Stewart of Halifax, Nova Scotia, Sir StClair Thomson, and Mr. L. Vernon Cargill. The proposal to found this oration was first put forward by Dr. Stewart at the meeting of the Canadian Medical Association held at Winnipeg eight years ago. The first of the series was delivered at the Ottawa meeting in 1914 by Dr. Stewart himself, and the second in 1927 by Sir Charles Sherrington at Toronto.

SIR WILFRED GRENFELL, K.C.M.G., M.D., delivered an address on Labrador on November 21st before the Royal Scottish Geographical Society, and received the society's Livingstone medal.

THE honorary degree of M.D. has been conferred on Professor G. H. F. Nuttall, F.R.S., of Cambridge, by the University of Liège.

DR. HUGH S. STANNUS has been elected Master of the Worshipful Company of Founders.

PROFESSOR PORTMANN of Bordeaux has been elected president of the next International Congress of Laryngology, which will be held at Bordeaux in July, 1931.

THE third edition of the well-known handbook entitled *Stations Thermales de France* has been published by the French Thermal Climatic Federation, and may be obtained from the Federation of the Health Resorts of France, Tavistock House North, Tavistock Square, W.C.1. A fully illustrated, practical, and interesting account of the various French health resorts and spas is provided in this useful booklet. The spas are arranged in alphabetical order, and indications are given as regards the maladies treated at each.

THE National Institute of Industrial Psychology celebrates its tenth birthday next year, and in every direction its activities have been growing apace. Consequently Dr. C. S. Myers, who has been director since its inception, has asked to be released from the duties of directorship, and has been appointed principal in order that he may devote the whole of his time to the institute's research and educational activities. Dr. G. H. Miles has been appointed director.

THE October issue of the *Journal of the Canadian Medical Association* contains a report from its Osler Memorial Committee. The Simcoe County Medical Association is erecting a memorial window in Trinity Church, Bond Head, Sir William Osler's birthplace. A triennial Osler Oration is to be delivered, Osler clubs established, and Osler scholarships founded throughout Canada; two scholarships have already been endowed in Osler's old school, Montreal. It is suggested that medical societies should hold an "Osler Day" every February, this month being chosen to commemorate Osler's first contribution to scientific literature, "Xmas and the microscope," in Hardwicke's *Science Gossip* for 1869.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9361, 9362, 9363,* and *9364* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

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MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

Natural Labour after Caesarean Section.

DR. SMEETON JOHNSON (Kidderminster), replying to the inquiry of "W. M." (November 22nd, p. 891), writes: I have a patient who four years ago was delivered of a healthy living child by Caesarean section, the operation being performed on account of eclampsia. Two years later I delivered her of a healthy child, forceps being applied; there was some troublesome post-partum haemorrhage. This month she gave birth to a child weighing 9 lb., the labour being perfectly normal and lasting three hours only.

DR. J. L. BLONSTEIN (London, S.W.11) writes: I attended a woman for her second baby in an uneventful labour. Her first was delivered by Caesarean section, on account of active tuberculosis of the hip-joint. I reported this case in the *Medical World* in 1926.

DR. H. R. SPARROW (Hull) writes: While I was resident medical officer at Leeds Maternity Hospital a woman was delivered naturally (and she had had, if I remember correctly, five previous normal confinements), her first child having been delivered by Caesarean section. She explained to me that Caesarean section had been performed owing to "obstructed labour, due to a pelvic tumour," which was subsequently removed. She had two operation scars in her abdominal wall. The nature of the "tumour" I did not ascertain.

Magnesium Hyposulphite in Asthma.

DR. M. J. FENTON (Stockwell, S.W.9) writes in reply to "I. T. S." (November 22nd, p. 891): I have been using magnesium hyposulphite in cases of asthma for some time past. So far, I have found no contraindications to the use of this remedy, having used it in cases of two to twenty-five years' standing. The treatment consists of intramuscular injection of 10 per cent. solution of magnesium hyposulphite, at four-day intervals, together with oral doses of elixir magnesium hyposulphite (A. and H.), two teaspoonfuls (= 15 grains) t.d.s. I am satisfied with the results, and hope to publish them at length later on.

Income Tax.

Outstanding Debts; General Expenses.

"R. M." suggests that it would be fairer to pay tax on fees only when they are received, and asks what is the usual proportion of general expenses—that is, rent, maid's wages, etc.—allowed to a medical practitioner.

*** It would certainly be more satisfactory in some ways to exclude unpaid fees from the gross income, though it would have the rather awkward corollary that tax would have to be paid after cessation of work on fees subsequently recovered. But in any case the legal position is clear — that is, that all bookings should be brought into the computation, less an estimated allowance for probable losses by bad debts. The cash basis is, in fact, accepted by the Revenue Department in many cases where the gross income of the practice is steady, so that the cash receipts normally are equivalent to the net value of the year's bookings. With regard to the proportion of the general expenses, probably one-half is as common as any fraction, but so much depends on individual cases that it is impossible to lay down any reliable generalization. A useful check on any proportion is to look at the converse side—that is, to see what is left to cover the private accommodation, service, etc., of the practitioner and his family.

Supply of Implements, etc.

"V. E. (Loud.)" refers to an answer on page 806 of the *Journal* in which it is stated that sums expended for "the supply . . . 'of any implements, utensils . . . employed for the purpose of the . . . profession'" are allowable.

*** The phrase is quoted from Rule 3 (*d*), applicable to Cases I and II, Schedule D, but should be read—to make clear the meaning to be attached to the word "supply"—with Rule 3 (*f*), which prohibits the deduction of "any sum employed—as capital in any . . . profession." If the article supplied is an addition to, rather than a replacement of, the professional equipment, then there is an introduction of additional capital involved, and the cost is not allowable. This extends to the element of improvement, even when there is replacement, as where a railway company was not allowed to deduct the *extra* cost involved in replacing rails and chairs by heavier ones—Highland Railway Company *v.* Balderston.

LETTERS, NOTES, ETC.

Lymphatic Leukaemia.

DR. E. P. POULTON (Guy's Hospital, S.E.) writes: I should be grateful if any of your readers could put me in touch with a case of lymphatic leukaemia for a special investigation. A case that had been under observation for a long time, and yet showed symptoms, would be of particular value.

Treatment of Alopecia with Ultra-violet Rays.

DR. ALBERT EIDINOW (London, W.) writes: During the past five years I have treated six cases of alopecia totalis by means of ultra-violet rays; four of these were men and two were women. The male patients were between the ages of 32 and 54 years, and had had complete alopecia for over six years before they started treatment with me. They have responded very well to treatment, and have now recovered growth of hair. The female patients were both over 50 years of age, and much more refractory to treatment. I have found that general irradiation of the skin of the body following the technique of short ultra-violet ray therapy is of greater importance than just the local treatment to the scalp and the other hair-growing areas. Many have suggested that a full erythema or blistering dose of light causing counter-irritation gives good results. On the whole, I have found that this is damaging, for during the stage when the hair just appears the blistering reaction will be followed by desquamation, and the young hairs are removed with it. The minimal erythema dose is preferable. The treatment of complete alopecias is slow and laborious, needing much perseverance, both on the part of the patient and of the physician. The patients were treated twice a week: the first signs of hair were only seen after two months' treatment, and good growth of hair was observed after nine months' treatment. It is difficult to regard this treatment as purely a local counter-irritation effect. The results suggest that there may be some activation of a hormone which stimulates the growth of hair, for in these cases the pubic hair recovered, and this area never received irradiation. The results in isolated patches of alopecia areata are well known and need no further description. I have seen some favourable results in cases of early baldness with thinning and loss of hair. This has been arrested by irradiation of the scalp combined with general irradiation of the body. I feel that the latter is of much importance in the treatment of alopecia.

A Paste Bandage for Varicose Ulceration and Phlebitis.

WE are informed by Mr. C. J. CELLAN-JONES, F.R.C.S., and Dr. KATHERINE CELLAN-JONES that, since the appearance of their description of a new paste bandage for the treatment of varicose ulceration and phlebitis in the *Journal* of October 4th (p. 560), they have received many inquiries for samples of these dressings, but have been unable to comply with the bulk of the requests, because the preparation of these bandages entails outlay in material and impregnating media. They have now arranged with Messrs. Cuxson, Gerrard, and Co., Ltd., surgical dressing makers of Oldbury, Birmingham, to prepare a paste bandage strictly according to the published formula, and to pack it in the manner described in the article. They add that, apart from dispatching specimen bandages, they will gladly continue to answer letters dealing with the technique of the treatment.

Renewal of Driving Licences.

THE Automobile Association advises motorists that the practice of certain licensing authorities of issuing reminders about renewal of their driving licences is likely to be discontinued. The A.A. has for many years kept a *Register of Driving Licences*, by means of which any member who furnishes the necessary particulars of his licence receives a postcard reminder seven days before date of renewal. Particulars of date of renewal and the address to which the reminder should be sent should be forwarded to the secretary, A.A., Fanum House, New Coventry Street, W.1.

Vacancies.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 48, 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52, 53, and 54.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 243.

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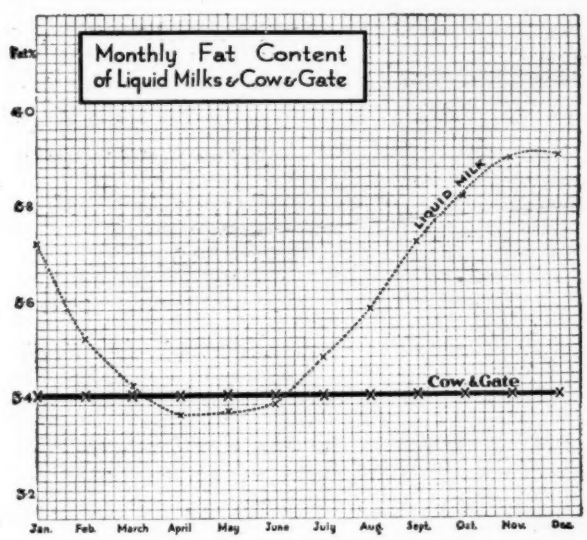

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